

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 3, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-09-wet
 Investigator(s): D. Mitchell, M. Rockwell Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): rr ditch Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.12256 Long: -77.416898 Datum: NAD-1983
 Soil Map Unit Name: Tomotley-Roanoke complex, 0 to 2 percent slopes, rarely flooded NWI classification: PEM?
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Railroad ditch wetland. Flows into Stream 5. Field Sheet 11-WTL-06-Wet1.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>5 inches</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Railside wetland, hydrology is likely connected to wetlands on the east side of the tracks.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-09-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>Acer rubrum</u>	<u>5</u>		<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)	
2 _____				Total Number of Dominant Species Across all Strata: <u>5</u> (B)	
3 _____				Percent of Dominant Species that are OBL, FACW, or FAC: <u>80.00%</u> (A/B)	
4 _____				Prevalence Index worksheet	
5 _____				Total % Cover of: _____ Multiply by: _____	
6 _____				OBL species <u>45</u> x 1 = <u>45</u>	
7 _____				FACW species <u>0</u> x 2 = <u>0</u>	
8 _____				FAC species <u>35</u> x 3 = <u>105</u>	
	<u>5</u> = Total Cover			FACU species <u>0</u> x 4 = <u>0</u>	
	50% of total cover <u>2.5</u>	20% of total cover: <u>1</u>		UPL species <u>0</u> x 5 = <u>0</u>	
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				Column totals <u>80</u> (A) <u>150</u> (B)	
1 <u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	Prevalence Index = B/A = <u>1.88</u>	
2 <u>Alnus spp.</u>	<u>10</u>	<u>Y</u>		Hydrophytic Vegetation Indicators:	
3 _____				<u> </u> 1 -Rapid Test for Hydrophytic Vegetation	
4 _____				<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
5 _____				<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0	
6 _____				<u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)	
7 _____					
8 _____					
	<u>20</u> = Total Cover			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
	50% of total cover <u>10</u>	20% of total cover: <u>4</u>		Definitions of Four Vegetation Strata:	
Herb Stratum (Plot Size: <u>5' radius</u>)				Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
1 <u>Juncus effusus</u>	<u>30</u>	<u>Y</u>	<u>OBL</u>	Sapling/shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
2 <u>Microstegium vimineum</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
3 <u>Murdannia keisak</u>	<u>15</u>	<u>Y</u>	<u>OBL</u>	Woody vines - All woody vines greater than 3.28 ft in height.	
4 _____					
5 _____					
6 _____					
7 _____					
8 _____					
9 _____					
10 _____					
11 _____					
12 _____					
	<u>65</u> = Total Cover				
	50% of total cover <u>32.5</u>	20% of total cover: <u>13</u>			
Woody Vine Stratum (Plot Size: <u>30' radius</u>)					
1 <u>none</u>				Hydrophytic vegetation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
2 _____					
3 _____					
4 _____					
5 _____					
	<u>0</u> = Total Cover				
	50% of total cover <u>0</u>	20% of total cover: <u>0</u>			

Remarks: (If observed, list morphological adaptations below).

Railside wetland.

SOIL

Sampling Point: **04-WTL-09-wet**

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 ¹	Loc2		
0-12	10YR 4 / 1	100					sandy clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input checked="" type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **Mucky soil.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-09-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 4

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-09-wet View of wetland from near rail



04-WTL-09-wet View of wetland



04-WTL-09-wet View of upland

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 3, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-09-upl
 Investigator(s): D. Mitchell, M. Rockwell Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): ballast Local relief (concave, convex, none): none Slope (%): 10%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.122367 Long: -77.416633 Datum: NAD-1983
 Soil Map Unit Name: Tomotley-Roanoke complex, 0 to 2 percent slopes, rarely flooded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	
Remarks: The upland area is located on hillslope of railroad ballast. Field Sheet 11-WTL-06-Up1.			

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-09-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1 <u>none</u>				Dominance Test worksheet: 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)														
2																		
3																		
4																		
5																		
6																		
7																		
8																		
_____ = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>				Prevalence Index worksheet <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">Total % Cover of:</td> <td style="width:50%;">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>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>20</u></td> <td>x 4 = <u>80</u></td> </tr> <tr> <td>UPL species <u>40</u></td> <td>x 5 = <u>200</u></td> </tr> <tr> <td>Column totals <u>60</u> (A)</td> <td><u>280</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>4.67</u> Hydrophytic Vegetation Indicators: <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 <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	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>20</u>	x 4 = <u>80</u>	UPL species <u>40</u>	x 5 = <u>200</u>	Column totals <u>60</u> (A)	<u>280</u> (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>0</u>	x 3 = <u>0</u>																	
FACU species <u>20</u>	x 4 = <u>80</u>																	
UPL species <u>40</u>	x 5 = <u>200</u>																	
Column totals <u>60</u> (A)	<u>280</u> (B)																	
_____ = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>																		
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)																		
1 <u>none</u>																		
2																		
3																		
4																		
5																		
6																		
7																		
8																		
_____ = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>																		
Herb Stratum (Plot Size: <u>5' radius</u>)																		
1 <u>Setaria faberi</u>	<u>40</u>	<u>Y</u>	<u>UPL</u>															
2 <u>Verbascum thapsus</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>															
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		
_____ = Total Cover 50% of total cover <u>30</u> 20% of total cover: <u>12</u>																		
Woody Vine Stratum (Plot Size: <u>30' radius</u>)																		
1 <u>none</u>																		
2																		
3																		
4																		
5																		
_____ = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>																		

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes _____ No X

Remarks: (If observed, list morphological adaptations below).

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 ¹	Loc2		
0-6	10YR 3 / 2	100					silt loam	
6-12	10YR 4 / 2	100					silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks: **Lots of organics. Dry, crumbly soil with evidence of coal cinders.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 7, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-10-wet
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): Railroad ditch Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.117371 Long: -77.412369 Datum: NAD-1983
 Soil Map Unit Name: Altavista fine sandy loam, 2 to 6 percent slopes, very rarely flooded NWI classification: PEM
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? no Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? no (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Very narrow railroad ditch wetland. Field Sheet 11-BWTL09WET1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u>X</u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u>X</u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>2</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	--

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

Remarks: **Railside ditch approximately 4 ft wide. Stream flows from under the railroad tracks. Brick and concrete culvert at ballast with ~30" opening (concrete paved over metal?). Flows through Wetland 9 and under access road through a single iron pipe (~30") and into wetland 8 where the stream channel loses definition and stream disperses into the wetland.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-10-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				
2				
3				
4				
5				
6				
7				
8				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				
1 <u>none</u>				
2				
3				
4				
5				
6				
7				
8				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)				
1 <u>Juncus effusus</u>	<u>20</u>	<u>Y</u>	<u>OBL</u>	
2 <u>Bidens spp.</u>	<u>12</u>	<u>Y</u>		
3 <u>Carex spp.</u>	<u>12</u>	<u>Y</u>		
4 <u>Phytolacca americana</u>	<u>12</u>	<u>Y</u>	<u>FACU</u>	
5 <u>Polygonum pensylvanicum</u>	<u>12</u>	<u>Y</u>		
6				
7				
8				
9				
10				
11				
12				
50% of total cover <u>34</u> 20% of total cover: <u>13.6</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)				
1 <u>none</u>				
2				
3				
4				
5				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 20.00% (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>20</u>	x 1 = <u>20</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>12</u>	x 4 = <u>48</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>32</u> (A)	<u>68</u> (B)

Prevalence Index = B/A = 2.13

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).

Alder present in some areas of the ditch, but not at the sampling point.

SOIL

Sampling Point: **04-WTL-10-wet**

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 ¹	Loc2		
0-2	10YR 3 / 1	100					silt loam	no mottles, muck
2-12+	10YR 5 / 1	100	10YR 4 / 6				clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **Soil is typical of roadside ditch.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-10-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	0	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 4

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-10-wet Railroad ditch wetland.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 7, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-10-upl
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): ballast Local relief (concave, convex, none): none Slope (%): 8%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.117375 Long: -77.412372 Datum: NAD-1983
 Soil Map Unit Name: Altavista fine sandy loam, 2 to 6 percent slopes, very rarely flooded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? no Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? no (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Upland data point near railroad ballst. Field Sheet 11-BWTL09Up1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Beside railroad ballast.	

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-10-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				
2				
3				
4				
5				
6				
7				
8				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				
1 <u>none</u>				
2				
3				
4				
5				
6				
7				
8				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)				
1 <u>Setaria faberi</u>	<u>40</u>	<u>Y</u>	<u>UPL</u>	
2 <u>Sorghum halepense</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>	
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
50% of total cover <u>40</u> 20% of total cover: <u>16</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)				
1 <u>none</u>				
2				
3				
4				
5				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A)

Prevalence Index worksheet

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>40</u>	x 4 = <u>160</u>
UPL species <u>40</u>	x 5 = <u>200</u>
Column totals <u>80</u> (A)	<u>360</u> (B)

Prevalence Index = B/A = 4.50

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No X

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: **04-WTL-10-upl**

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 ¹	Loc ²		
0-12	10YR 4 / 3	100					sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 **X**

Remarks: **Drier crumbly soil than wetland.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 7, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-11-wet-1
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.117183 Long: -77.412494 Datum: NAD-1983
 Soil Map Unit Name: Tomotley-Roanoke complex, 0 to 2 percent slopes, rarely flooded NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is a bottomland hardwood forest wetland. Field Sheet 11-BWTL08WET1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>6</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>6</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	--

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

Remarks: **Bottomland hardwood forest (lower) likely adjacent a nearby creek.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-11-wet-1**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status																													
1 <u>Liquidambar styraciflua</u>	<u>65</u>		<u>FAC</u>	Dominance Test worksheet: 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)																												
2																																
3																																
4																																
5																																
6																																
7																																
8																																
65 = Total Cover 50% of total cover <u>32.5</u> 20% of total cover: <u>13</u>				Prevalence Index worksheet <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;"></td> <td style="text-align:center;">Total % Cover of:</td> <td style="width:50%;"></td> <td style="text-align:center;">Multiply by:</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>107</u></td> <td>x 3 =</td> <td style="text-align:center;"><u>321</u></td> </tr> <tr> <td>FACU species</td> <td style="text-align:center;"><u>5</u></td> <td>x 4 =</td> <td style="text-align:center;"><u>20</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>112</u></td> <td>(A)</td> <td style="text-align:center;"><u>341</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.04</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>107</u>	x 3 =	<u>321</u>	FACU species	<u>5</u>	x 4 =	<u>20</u>	UPL species	<u>0</u>	x 5 =	<u>0</u>	Column totals	<u>112</u>	(A)	<u>341</u> (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>107</u>	x 3 =	<u>321</u>																													
FACU species	<u>5</u>	x 4 =	<u>20</u>																													
UPL species	<u>0</u>	x 5 =	<u>0</u>																													
Column totals	<u>112</u>	(A)	<u>341</u> (B)																													
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)																																
1 <u>Acer rubrum</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>																													
2 <u>Liquidambar styraciflua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>																													
3 <u>Amelanchier arborea</u>	<u>5</u>	<u>N</u>	<u>FACU</u>																													
4																																
5																																
6																																
7																																
8																																
45 = Total Cover 50% of total cover <u>22.5</u> 20% of total cover: <u>9</u>																																
Herb Stratum (Plot Size: <u>5' radius</u>)																																
1 <u>none</u>																																
2																																
3																																
4																																
5																																
6																																
7																																
8																																
9																																
10																																
11																																
12																																
0 = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>																																
Woody Vine Stratum (Plot Size: <u>30' radius</u>)																																
1 <u>Campsis radicans</u>	<u>2</u>		<u>FAC</u>																													
2																																
3																																
4																																
5																																
2 = Total Cover 50% of total cover <u>1</u> 20% of total cover: <u>0.4</u>																																
Hydrophytic vegetation present? Yes <u>X</u> No _____																																
Remarks: (If observed, list morphological adaptations below). <p style="text-align:center;">Vegetation typical for wetland areas in the region.</p>																																

SOIL

Sampling Point: **04-WTL-11-wet-1**

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 ¹	Loc2		
0-4	10YR 3 / 1	100					sandy clay	
4-12+	10YR 4 / 1	100					sandy clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **Soil is much wetter and muckier than upland area.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-11-wet-1

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 5

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-11-wet-1 Ditch leading into wetland.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 7, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-11-upl-1
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 7%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.117263 Long: -77.412599 Datum: NAD-1983
 Soil Map Unit Name: Altavista fine sandy loam, 2 to 6 percent slopes, very rarely flooded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: This is an upland data point for wetland 8. Field Sheet 11-BWTL08Up1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-11-upl-1**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>Liquidambar styraciflua</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)	
2 <u>Pinus taeda</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	Total Number of Dominant Species Across all Strata: <u>8</u> (B)	
3 <u>Acer rubrum</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	Percent of Dominant Species that are OBL, FACW, or FAC: <u>37.50%</u> (A)	
4 _____					
5 _____					
6 _____					
7 _____					
8 _____					
50% of total cover <u>22.5</u>					
20% of total cover: <u>9</u>					
Total Cover <u>45</u>					
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet	
1 <u>Viburnum spp.</u>	<u>10</u>	<u>Y</u>		Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u>	
2 <u>Liquidambar styraciflua</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	FACW species <u>0</u> x 2 = <u>0</u>	
3 _____				FAC species <u>50</u> x 3 = <u>150</u>	
4 _____				FACU species <u>10</u> x 4 = <u>40</u>	
5 _____				UPL species <u>0</u> x 5 = <u>0</u>	
6 _____				Column totals <u>60</u> (A) <u>190</u> (B)	
7 _____					
8 _____					
50% of total cover <u>7.5</u>					
20% of total cover: <u>3</u>					
Total Cover <u>15</u>				Prevalence Index = B/A = <u>3.17</u>	
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:	
1 <u>Lonicera spp.</u>	<u>15</u>	<u>Y</u>		<u>1</u> -Rapid Test for Hydrophytic Vegetation	
2 <u>Bidens spp.</u>	<u>10</u>	<u>Y</u>		<u>2</u> - Dominance Test is >50%	
3 <u>Schizachyrium scoparium</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	<u>3</u> - Prevalence Index is ≤3.0	
4 <u>Solidago spp.</u>	<u>10</u>	<u>Y</u>		<u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)	
5 <u>Eutrochium spp.</u>	<u>5</u>	<u>N</u>			
6 _____					
7 _____					
8 _____					
9 _____					
10 _____					
11 _____					
12 _____					
50% of total cover <u>25</u>					
20% of total cover: <u>10</u>					
Total Cover <u>50</u>					
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Definitions of Four Vegetation Strata:	
1 <u>Toxicodendron radicans</u>			<u>FAC</u>	Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
2 _____				Sapling/shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
3 _____				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
4 _____				Woody vines - All woody vines greater than 3.28 ft in height.	
5 _____					
50% of total cover <u>0</u>					
20% of total cover: <u>0</u>					
Total Cover <u>0</u>					
				Hydrophytic vegetation present? Yes _____ No <u>X</u>	

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: **04-WTL-11-upl-1**

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 ¹	Loc ²		
0-12	10YR 3 / 1	100					sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input checked="" type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks: **Soil substantially drier at upland location.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 7, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-11-wet-2
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.11511 Long: -77.410831 Datum: NAD-1983
 Soil Map Unit Name: Tomotley-Roanoke complex, 0 to 2 percent slopes, rarely flooded NWI classification: PEM
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Wetland abuts road. Field Sheet 11-BWTL08WET2.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>12+</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Wetland abuts road.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-11-wet-2**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				
2				
3				
4				
5				
6				
7				
8				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				
1 <u>none</u>				
2				
3				
4				
5				
6				
7				
8				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)				
1 <u>Juncus effusus</u>	<u>50</u>	<u>Y</u>	<u>OBL</u>	
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
50% of total cover <u>25</u> 20% of total cover: <u>10</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)				
1 <u>none</u>				
2				
3				
4				
5				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: _____ (B)

Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column totals _____	(A) _____ (B) _____

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No _____

Remarks: (If observed, list morphological adaptations below).

Broadleaf cattail, woolgrass, sweetgum, buttonbush are all present, though not at data point.

SOIL

Sampling Point: **04-WTL-11-wet-2**

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 ¹	Loc2		
0-12+	10YR 2 / 1	100						mucky

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input checked="" type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **Very mucky.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 04 City/County: Caroline County Sampling Date: December 7, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-11-upl-2
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 5%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.11494 Long: -77.410632 Datum: NAD-1983
 Soil Map Unit Name: Altavista fine sandy loam, 2 to 6 percent slopes, very rarely flooded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u> X </u> Hydric Soil Present? Yes <u> </u> No <u> X </u> Wetland Hydrology Present? Yes <u> </u> No <u> X </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> X </u>
Remarks: Edge of gravel access road, wetland abuts road. Field Sheet 11-BWTL08up2.	

HYDROLOGY

Wetland Hydrology Indicators:	<u>Secondary Indicators (minimum of two required)</u>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	<u> </u> Surface Soil Cracks (B6)
<u> </u> Surface Water (A1)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> High Water Table (A2)	<u> </u> Drainage Patterns (B10)
<u> </u> Saturation (A3)	<u> </u> Moss Trim Lines (B16)
<u> </u> Water Marks (B1)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Sediment Deposits (B2)	<u> </u> Crayfish Burrows (C8)
<u> </u> Drift Deposits (B3)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Geomorphic Position (D2)
<u> </u> Iron Deposits (B5)	<u> </u> Shallow Aquitard (D3)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Water-Stained Leaves (B9)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Aquatic Fauna (B13)	
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations:	
Surface water present? Yes <u> </u> No <u> </u> Depth (inches): <u> </u>	Wetland Hydrology Present? Yes <u> </u> No <u> X </u>
Water table present? Yes <u> </u> No <u> </u> Depth (inches): <u> </u>	
Saturation present? Yes <u> </u> No <u> </u> Depth (inches): <u> </u> (includes capillary fringe)	

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

Remarks: **Gravel covered access road parallel to tracks. Wetland abuts road at this data point.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-11-upl-2**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				
2				
3				
4				
5				
6				
7				
8				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				
1 <u>none</u>				
2				
3				
4				
5				
6				
7				
8				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)				
1 <u>none</u>				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)				
1 <u>none</u>				
2				
3				
4				
5				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 0 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A)

Prevalence Index worksheet

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>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>0</u>	(A) <u>0</u> (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes _____ No X

Remarks: (If observed, list morphological adaptations below).
Gravel road.

SOIL

Sampling Point: **04-WTL-11-upl-2**

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 ¹	Loc ²		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators 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 **X**

Remarks: **No soil sample taken, because upland is in the road.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 7, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-12-wet
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.113535 Long: -77.409629 Datum: NAD-1983
 Soil Map Unit Name: Altavista fine sandy loam, 0 to 2 percent slopes, very rarely flooded NWI classification: PEM
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is a emergent wetland in a mowed field. This wetland appears to be isolated.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u>X</u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u>X</u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	--

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

Remarks: **This wetland appears to be hydrologically isolated.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-12-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1				
2				
3				
4				
5				
6				
7				
8				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Total Cover <u>0</u>				
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1				
2				
3				
4				
5				
6				
7				
8				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Total Cover <u>0</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1	<u>15</u>	<u>Y</u>	<u>OBL</u>	
2	<u>15</u>	<u>Y</u>	<u>OBL</u>	
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
50% of total cover <u>15</u> 20% of total cover: <u>6</u>				
Total Cover <u>30</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1				
2				
3				
4				
5				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Total Cover <u>0</u>				

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: _____ (B)

Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column totals _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).

Herbaceous vegetation is sparse. Vegetation within the field has been mowed. Soils are exposed.

SOIL

Sampling Point: **04-WTL-12-wet**

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 ¹	Loc ²		
0-4	10YR 3 / 1	100					sandy clay	
4-12	10YR 5 / 1	100					sandy clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **Soils are reducing.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-12-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	0	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	0	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	0	

Total Score 1

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 7, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-12-upl
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 7%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.113796 Long: -77.409645 Datum: NAD-1983
 Soil Map Unit Name: Altavista fine sandy loam, 0 to 2 percent slopes, very rarely flooded NWI classification: Upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	
Remarks: This is an upland data point in a mowed field adjacent to Lake Farm Road.			

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SOIL

Sampling Point: **04-WTL-12-upl**

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 ¹	Loc ²		
0-12	10YR 5 / 4	100					Sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks: **Soils may be disturbed from agricultural activities.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 7, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-13-wet
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): ditch/field Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.110194 Long: -77.406807 Datum: NAD-1983
 Soil Map Unit Name: Tomotley-Roanoke complex, 0 to 2 percent slopes, rarely flooded NWI classification: PEM
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Adjacent to two track road and open field. Culvert at north end, corrugated steel cleared 12" large metal culvert at south end where stream channel intersects. Field Sheet 11-BWTL10WET1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u>X</u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>4</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Adjacent field (soybean) is wet with upland between field and Wetland 10. Wetland 10 is a roadside ditch that drains adjacent field and flows to the south abutting Stream 6.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-13-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>none</u>				Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</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>25.00%</u> (A/B)	
4 _____				Prevalence Index worksheet	
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>	
8 _____				FAC species <u>5</u> x 3 = <u>15</u>	
				FACU species <u>0</u> x 4 = <u>0</u>	
				UPL species <u>0</u> x 5 = <u>0</u>	
				Column totals <u>5</u> (A) <u>15</u> (B)	
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				Prevalence Index = B/A = <u>3.00</u>	
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				Hydrophytic Vegetation Indicators:	
1 <u>Acer rubrum</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	<u> </u> 1 -Rapid Test for Hydrophytic Vegetation	
2 _____				<u> </u> 2 - Dominance Test is >50%	
3 _____				<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0	
4 _____				<u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)	
5 _____					
6 _____					
7 _____					
8 _____					
50% of total cover <u>2.5</u> 20% of total cover: <u>1</u>				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Herb Stratum (Plot Size: <u>5' radius</u>)				Definitions of Four Vegetation Strata:	
1 <u>Panicum spp.</u>	<u>50</u>	<u>Y</u>		Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
2 <u>Juncus spp.</u>	<u>20</u>	<u>Y</u>		Sapling/shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
3 <u>Carex spp.</u>	<u>20</u>	<u>Y</u>		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
4 _____				Woody vines - All woody vines greater than 3.28 ft in height.	
5 _____					
6 _____					
7 _____					
8 _____					
9 _____					
10 _____					
11 _____					
12 _____					
50% of total cover <u>45</u> 20% of total cover: <u>18</u>				Hydrophytic vegetation present? Yes <input checked="" type="checkbox"/> No _____	
Woody Vine Stratum (Plot Size: <u>30' radius</u>)					
1 <u>none</u>					
2 _____					
3 _____					
4 _____					
5 _____					
50% of total cover <u>0</u> 20% of total cover: <u>0</u>					

Remarks: (If observed, list morphological adaptations below).

Alder present in some areas of the ditch, but not at the sampling point.

SOIL

Sampling Point: **04-WTL-13-wet**

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 ¹	Loc2		
0-12+	10YR 4 / 1	100					clay	mucky clay

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **Oxidized root channels.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-13-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	0	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 4

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-13-wet

Narrow raiiside ditch.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 7, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-13-upl
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): ballast Local relief (concave, convex, none): none Slope (%): 4%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.109991 Long: -77.406499 Datum: NAD-1983
 Soil Map Unit Name: Tomotley-Roanoke complex, 0 to 2 percent slopes, rarely flooded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Upland data point. Field Sheet 11-BWTL10Up1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Area is well drained.	

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-13-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				
2				
3				
4				
5				
6				
7				
8				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				
1 <u>Rhus typhina</u>	<u>10</u>	<u>Y</u>		
2				
3				
4				
5				
6				
7				
8				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)				
1 <u>Lonicera japonica</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>	
2 <u>Solidago spp.</u>	<u>10</u>	<u>N</u>		
3 <u>Rubus spp.</u>	<u>10</u>	<u>N</u>		
4				
5				
6				
7				
8				
9				
10				
11				
12				
50% of total cover <u>30</u> 20% of total cover: <u>12</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)				
1 <u>none</u>				
2				
3				
4				
5				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A)

Prevalence Index worksheet

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>40</u>	x 4 = <u>160</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>40</u> (A)	<u>160</u> (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No X

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: **04-WTL-13-upl**

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 ¹	Loc2		
0-2	10YR 3 / 2	100					silt loam	organic material present
2-12+	10YR 5 / 1	90	7.5YR 6 / 4	10			sandy clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks: **Coal cinders present in soil. Soil very dry compared to mucky wetland soil.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 8, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-14-wet
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.092161 Long: -77.392627 Datum: NAD-1983
 Soil Map Unit Name: Tomotley-Roanoke complex, 0 to 2 percent slopes, rarely flooded NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Forested wetland within Mattaponi River corridor. Field Sheet 11-WTL-06-wet1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u>X</u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u>X</u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u>X</u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>12 inches</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Area may receive infrequent overflow flooding from the Mattaponi River.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-14-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Quercus phellos</u>	<u>20</u>		<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</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>80.00%</u> (A/B)
2 <u>Betula nigra</u>	<u>10</u>		<u>FACW</u>	
3 <u>Ilex opaca</u>	<u>10</u>		<u>FAC</u>	
4 <u>Liquidambar styraciflua</u>	<u>5</u>		<u>FAC</u>	
5 _____				
6 _____				
7 _____				
8 _____				
50% of total cover <u>22.5</u> 20% of total cover: <u>9</u>				Prevalence Index worksheet Total % Cover of: Multiply by: OBL species <u>10</u> x 1 = <u>10</u> FACW species <u>55</u> x 2 = <u>110</u> FAC species <u>50</u> x 3 = <u>150</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>115</u> (A) <u>270</u> (B) Prevalence Index = B/A = <u>2.35</u>
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				
1 <u>none</u>				
2 _____				
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				Hydrophytic Vegetation Indicators: <u> </u> 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 <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)
Herb Stratum (Plot Size: <u>5' radius</u>)				
1 <u>Chasmanthium latifolium</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
2 <u>Carex lurida</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>	
3 <u>Dichantherium clandestinum</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	
4 <u>Panicum spp.</u>	<u>10</u>	<u>Y</u>		
5 <u>Chasmanthium laxum</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	
6 <u>Smilax spp.</u>	<u>5</u>	<u>N</u>		
7 <u>Ilex opaca</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
8 <u>Carex intumescens</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
9 <u>Aster spp.</u>	<u>5</u>	<u>N</u>		
10 _____				
11 _____				
12 _____				
50% of total cover <u>45</u> 20% of total cover: <u>18</u>				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 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 vines - All woody vines greater than 3.28 ft in height.
Woody Vine Stratum (Plot Size: <u>30' radius</u>)				
1 <u>none</u>				
2 _____				
3 _____				
4 _____				
5 _____				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				Hydrophytic vegetation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: (If observed, list morphological adaptations below).				

SOIL

Sampling Point: **04-WTL-14-wet**

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 ¹	Loc2		
0-5	10YR 2 / 1	100					silt loam	
5-15	2.5Y 6 / 2	75	10YR 5 / 8	5			sand	tan and saturated with redox

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input checked="" type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **River nearby. Sandy with red oxidation component.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-14-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	3	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	3	

Total Score 10

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-14-wet View of wetland, willow oak flat



04-WTL-14-wet View of wetland



04-WTL-14-wet View of wetland



04-WTL-14-wet Wetland soil core



04-WTL-14-wet View of upland



04-WTL-14-wet Upland soil core

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 8, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-14-upl
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): slope Slope (%): 3%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.094158 Long: -77.394158 Datum: NAD-1983
 Soil Map Unit Name: Tomotley-Roanoke complex, 0 to 2 percent slopes, rarely flooded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u> X </u> Hydric Soil Present? Yes <u> </u> No <u> X </u> Wetland Hydrology Present? Yes <u> </u> No <u> X </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> X </u>
Remarks: Upland area on hillslope. Field Sheet 11-WTL-06-Up1 Team A.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u> X </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Upland area that is well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-14-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 Fagus grandifolia	20	Y	FACU	Dominance Test worksheet: 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)
2 Acer rubrum	20	Y	FAC	
3				
4				
5				
6				
7				
8				
50% of total cover 20		40 = Total Cover		Prevalence Index worksheet 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>34</u> x 3 = <u>102</u> FACU species <u>48</u> x 4 = <u>192</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>97</u> (A) <u>324</u> (B) Prevalence Index = B/A = <u>3.34</u> Hydrophytic Vegetation Indicators: <u>1</u> -Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)
20% of total cover: 8				
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				
1 Fagus grandifolia	20	Y	FACU	
2 Ilex opaca	5	N	FAC	
3 Juniperus virginiana	3	N	FACU	
4				
5				
6				
7				
8				
50% of total cover 14		28 = Total Cover		
20% of total cover: 5.6				
Herb Stratum (Plot Size: <u>5' radius</u>)				
1 Cinna arundinacea	10	Y	FACW	
2 Ilex opaca	5	Y	FAC	
3 Sorghastrum nutans	5	Y	FACU	
4 Dichanthelium clandestinum	5	Y	FACW	
5 Elymus virginicus	4	N	FAC	
6				
7				
8				
9				
10				
11				
12				
50% of total cover 14.5		29 = Total Cover		
20% of total cover: 5.8				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)				
1 Smilax spp.	5	Y		
2				
3				
4				
5				
50% of total cover 2.5		5 = Total Cover		
20% of total cover: 1				

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No **X**

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: **04-WTL-14-upl**

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 ¹	Loc ²		
0-2							loam	organic layer
2-15	2.5YR	5 / 4					loamy sand	fine sandy loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		

³Indicators 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 X

Remarks: **Soil is very crumbly. Some gravel present.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 7, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-15-wet-1
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): <2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.087879 Long: -77.389419 Datum: NAD-1983
 Soil Map Unit Name: Riverview silt loam, 0 to 2 percent slopes, occasionally flooded NWI classification: PEM
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is an emergent portion of WTL-05 just north of Campbell Creek (STR-04). Field Sheet 11-WTL-05-wet#1.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input checked="" type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input checked="" type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>8</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **High water table and flooding from Campbell Creek.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-15-wet-1**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across all Strata: _____ (B) Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)
2 _____				
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
_____ = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>				Prevalence Index worksheet Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column totals _____ (A) _____ (B) Prevalence Index = B/A = _____ Hydrophytic Vegetation Indicators: <input checked="" 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 <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				
1 <u>none</u>				
2 _____				
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
_____ = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)				
1 <u>Scirpus cyperinus</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>	
2 <u>Aster spp.</u>	<u>10</u>	<u>Y</u>		
3 <u>Scirpus georgianus</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	
4 <u>Rumex crispus</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
5 <u>Carex intumescens</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
6 <u>Smilax spp.</u>	<u>3</u>	<u>N</u>		
7 _____				
8 _____				
9 _____				
10 _____				
11 _____				
12 _____				
_____ = Total Cover 50% of total cover <u>19</u> 20% of total cover: <u>7.6</u>				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 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 vines - All woody vines greater than 3.28 ft in height. Hydrophytic vegetation present? Yes <u>X</u> No _____
Woody Vine Stratum (Plot Size: <u>30' radius</u>)				
1 <u>none</u>				
2 _____				
3 _____				
4 _____				
5 _____				
_____ = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>				

Remarks: (If observed, list morphological adaptations below).
Plants mostly in standing water.

SOIL

Sampling Point: **04-WTL-15-wet-1**

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 ¹	Loc ²		
0-4	5Y 4 / 1	100					silty clay loam	
4-6	5Y 5 / 1	95	2.5YR 4 / 6	5			silty clay loam	
6-15	5Y 6 / 1	70	5YR 5 / 6	30			silty clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

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

Restrictive Layer (if observed):
 Type: clay
 Depth (inches): 6

Hydric soil present? Yes X No

Remarks:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-15-wet-1

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	2	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 9

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-15-wet-1 View of PEM portion of wetland



04-WTL-15-wet-1 View of PEM portion of wetland



04-WTL-15-wet-1 View of PEM portion of wetland



04-WTL-15-wet-1 View of PEM portion of wetland



04-WTL-15-wet-1 Wetland soil core



04-WTL-15-wet-1 Wetland soil

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 7, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-15-wet-2
 Investigator(s): J. Budnick, M. Rockwell Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.087646 Long: -77.389283 Datum: NAD-1983
 Soil Map Unit Name: Riverview silt loam, 0 to 2 percent slopes, occasionally flooded NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This portion of the bottomland hardwood wetland had a series of sloughs and channels throughout. Field Sheet 11-WTL-05-wet2 Team A.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u>X</u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u>X</u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u>X</u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u>X</u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>12 inches</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Crayfish burrows.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-15-wet-2**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1 <u>Ilex opaca</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</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>77.78%</u> (A/B)
2 <u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
3 <u>Quercus phellos</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	
4 <u>Quercus palustris</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	
5 <u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
6 _____				Prevalence Index worksheet Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>30</u> x 2 = <u>60</u> FAC species <u>55</u> x 3 = <u>165</u> FACU species <u>30</u> x 4 = <u>120</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>115</u> (A) <u>345</u> (B) Prevalence Index = B/A = <u>3.00</u>
7 _____				
8 _____				
_____ = Total Cover	<u>70</u>			
50% of total cover <u>35</u>		<u>14</u>		
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				
1 <u>Quercus palustris</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	
2 _____				
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
_____ = Total Cover	<u>10</u>			
50% of total cover <u>5</u>		<u>2</u>		
Herb Stratum (Plot Size: <u>5' radius</u>)				
1 <u>Uniola paniculata</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2 <u>Carex spp.</u>	<u>10</u>	<u>Y</u>		
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
9 _____				
10 _____				
11 _____				
12 _____				
_____ = Total Cover	<u>40</u>			
50% of total cover <u>20</u>		<u>8</u>		
Woody Vine Stratum (Plot Size: <u>30' radius</u>)				
1 <u>Toxicodendron radicans</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic vegetation present? Yes <u>X</u> No _____
2 _____				
3 _____				
4 _____				
5 _____				
_____ = Total Cover	<u>5</u>			
50% of total cover <u>2.5</u>		<u>1</u>		

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: **04-WTL-15-wet-2**

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)		%		
0-4	5Y	4 / 1	100					silty clay loam
4-6	5Y	5 / 1	95	2.5YR	4 / 6	5		silty clay loam
6-15	5Y	6 / 1	70	5YR	5 / 6	30		silty clay

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils ³ :		
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)			
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)			
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)			
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)			
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)			
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)				
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.			
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)				
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)				
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)				
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)				
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)				
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)					

Restrictive Layer (if observed):
 Type: clay
 Depth (inches): 6 Hydric soil present? Yes X No _____

Remarks:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-15-wet-2

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	2	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 9

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-15-wet-2 View of PFO portion of wetland.



04-WTL-15-wet-2 View of PFO portion of wetland.



04-WTL-15-wet-2 View of PFO portion of wetland.



04-WTL-15-wet-2 View of PFO portion of wetland.



04-WTL-15-wet-2 Wetland soil core.



04-WTL-15-wet-2 Wetland soils.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 8, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-15-wet-3
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.088818 Long: -77.390203 Datum: NAD-1983
 Soil Map Unit Name: Riverview silt loam, 0 to 2 percent slopes, occasionally flooded NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Forested wetland with emergent fringe. Field Sheet 11-WTL-05-wet3 Team A.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u>X</u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u>X</u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u>X</u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u>X</u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>6 inches</u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	--

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

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-15-wet-3**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>Liquidambar styraciflua</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A)	
2 <u>Acer rubrum</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	Total Number of Dominant Species Across all Strata: <u>7</u> (B)	
3 <u>Quercus phellos</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	Percent of Dominant Species that are OBL, FACW, or FAC: <u>85.71%</u> (A/B)	
4 <u>Ilex opaca</u>	<u>10</u>	<u>N</u>	<u>FAC</u>		
5 <u>Fagus grandifolia</u>	<u>5</u>	<u>N</u>	<u>FACU</u>		
6					
7					
8					
<u>75</u> = Total Cover 50% of total cover <u>37.5</u> 20% of total cover: <u>15</u>				Prevalence Index worksheet	
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				Total % Cover of: _____ Multiply by: _____	
1 <u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	OBL species <u>5</u> x 1 = <u>5</u>	
2 <u>Quercus palustris</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>	FACW species <u>100</u> x 2 = <u>200</u>	
3 <u>Liquidambar styraciflua</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	FAC species <u>81</u> x 3 = <u>243</u>	
4 <u>Fagus grandifolia</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	FACU species <u>14</u> x 4 = <u>56</u>	
5				UPL species <u>0</u> x 5 = <u>0</u>	
6				Column totals <u>200</u> (A) <u>504</u> (B)	
7				Prevalence Index = B/A = <u>2.52</u>	
8				Hydrophytic Vegetation Indicators:	
<u>25</u> = Total Cover 50% of total cover <u>12.5</u> 20% of total cover: <u>5</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 <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
Herb Stratum (Plot Size: <u>5' radius</u>)				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
1 <u>Chasmanthium laxum</u>	<u>85</u>	<u>Y</u>	<u>FACW</u>	Definitions of Four Vegetation Strata:	
2 <u>Carex lurida</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
3 <u>Aster spp.</u>	<u>5</u>	<u>N</u>		Sapling/shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
4 <u>Lonicera japonica</u>	<u>4</u>	<u>N</u>	<u>FACU</u>	Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
5 <u>Ilex opaca</u>	<u>4</u>	<u>N</u>	<u>FAC</u>	Woody vines - All woody vines greater than 3.28 ft in height.	
6					
7					
8					
9					
10					
11					
12					
<u>103</u> = Total Cover 50% of total cover <u>51.5</u> 20% of total cover: <u>20.6</u>				Hydrophytic vegetation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Woody Vine Stratum (Plot Size: <u>30' radius</u>)					
1 <u>Toxicodendron radicans</u>	<u>2</u>		<u>FAC</u>		
2 <u>Smilax spp.</u>	<u>2</u>				
3					
4					
5					
<u>4</u> = Total Cover 50% of total cover <u>2</u> 20% of total cover: <u>0.8</u>					

Remarks: (If observed, list morphological adaptations below).
Beech and holly are found in higher spots within wetland.

SOIL

Sampling Point: **04-WTL-15-wet-3**

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 ¹		
0-3	2.5Y	3 / 1	100					silty clay
3-5	2.5Y	3 / 1	95	7.5YR	6 / 8	5		silty clay
5-15	5Y	5 / 1	98	7.5YR	5 / 8	2		silty clay

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils ³ :		
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)			
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)			
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)			
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)			
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)			
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)			
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)				
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)				
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)				
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)				
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)				
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)				
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)				
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)					

³Indicators 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: **Saturated at surface.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-15-wet-3

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 7

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-15-wet-3 View of PFO portion with PEM fringe



04-WTL-15-wet-3 View of PFO portion with PEM fringe



04-WTL-15-wet-3 View of PFO portion of wetland



04-WTL-15-wet-3 View of PFO portion of wetland

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Spotsylvania Sampling Date: December 8, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-15-upl
 Investigator(s): D. Mitchell, M. Rockwell Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 5%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.089009 Long: -77.390001 Datum: NAD-1983
 Soil Map Unit Name: Chewacla silt loam, 0 to 2 percent slopes, occasionally flooded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	
Remarks: This is a well-drained upland data point along the railroad ballast.			

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
--	---

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

Remarks: **Upland area. No wetland hydrology present..**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-15-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1					
2					
3					
4					
5					
6					
7					
8					
		<u>0</u> = Total Cover			
		50% of total cover <u>0</u>	20% of total cover: <u>0</u>		
Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)				
1	<u>Ilex opaca</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	
2	<u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
3					
4					
5					
6					
7					
8					
		<u>25</u> = Total Cover			
		50% of total cover <u>12.5</u>	20% of total cover: <u>5</u>		
Herb Stratum	(Plot Size: <u>5' radius</u>)				
1		<u>80</u>	<u>Y</u>		
2		<u>5</u>	<u>N</u>		
3		<u>5</u>	<u>N</u>		
4					
5					
6					
7					
8					
9					
10					
11					
12					
		<u>90</u> = Total Cover			
		50% of total cover <u>45</u>	20% of total cover: <u>18</u>		
Woody Vine Stratum	(Plot Size: <u>30' radius</u>)				
1	<u>none</u>				
2					
3					
4					
5					
		<u>0</u> = Total Cover			
		50% of total cover <u>0</u>	20% of total cover: <u>0</u>		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Prevalence Index worksheet

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>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>25</u>	(A) <u>75</u> (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).

There is sparse vegetation along the railroad ballast. Herbicide may be used along ballast.

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 ¹	Loc2		
0-12								Gravel

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

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

Restrictive Layer (if observed):
 Type: Gravel from Railroad ballast
 Depth (inches): Surface

Hydric soil present? Yes No

Remarks: **The railroad ballast is comprised of restrictive gravel fill.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 7, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-16-wet
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): <2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.083341 Long: 77.385701 Datum: NAD-1983
 Soil Map Unit Name: Altavista fine sandy loam, 2 to 6 percent slopes, very rarely flooded NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is a bottomland hardwood component of this wetland. Field Sheet 11-WTL-03-wet1 Team A.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u>X</u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u>X</u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u>X</u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u>X</u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>2 inches</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	--

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

Remarks: **Iron deposits visible - orange/red. Sheen present on water surface. Buttressed tree trunks.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-16-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>Acer rubrum</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u>	(A)
2 <u>Liriodendron tulipifera</u>	<u>25</u>	<u>Y</u>	<u>FACU</u>	Total Number of Dominant Species Across all Strata: <u>7</u>	(B)
3 <u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	Percent of Dominant Species that are OBL, FACW, or FAC: <u>85.71%</u>	(A/B)
4 _____				Prevalence Index worksheet	
5 _____				Total % Cover of:	Multiply by:
6 _____				OBL species <u>65</u>	x 1 = <u>65</u>
7 _____				FACW species <u>0</u>	x 2 = <u>0</u>
8 _____				FAC species <u>95</u>	x 3 = <u>285</u>
	<u>85</u>	= Total Cover		FACU species <u>25</u>	x 4 = <u>100</u>
	50% of total cover <u>42.5</u>	20% of total cover: <u>17</u>		UPL species <u>0</u>	x 5 = <u>0</u>
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				Column totals <u>185</u>	(A) <u>450</u> (B)
1 <u>Acer rubrum</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	Prevalence Index = B/A = <u>2.43</u>	
2 <u>Liquidambar styraciflua</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators:	
3 _____				<u> </u> 1 -Rapid Test for Hydrophytic Vegetation	
4 _____				<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
5 _____				<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0	
6 _____				<u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)	
7 _____					
8 _____					
	<u>25</u>	= Total Cover		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
	50% of total cover <u>12.5</u>	20% of total cover: <u>5</u>		Definitions of Four Vegetation Strata:	
Herb Stratum (Plot Size: <u>5' radius</u>)				Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
1 <u>Scirpus georgianus</u>	<u>50</u>	<u>Y</u>	<u>OBL</u>	Sapling/shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
2 <u>Carex lurida</u>	<u>10</u>	<u>N</u>	<u>OBL</u>	Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
3 <u>Carex spp.</u>	<u>10</u>	<u>N</u>		Woody vines - All woody vines greater than 3.28 ft in height.	
4 <u>Osmunda regalis</u>	<u>5</u>	<u>N</u>	<u>OBL</u>		
5 <u>Chasmanthium latifolium</u>	<u>5</u>	<u>N</u>	<u>FAC</u>		
6 _____					
7 _____					
8 _____					
9 _____					
10 _____					
11 _____					
12 _____					
	<u>80</u>	= Total Cover		Hydrophytic vegetation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
	50% of total cover <u>40</u>	20% of total cover: <u>16</u>			
Woody Vine Stratum (Plot Size: <u>30' radius</u>)					
1 <u>Smilax glauca</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>		
2 _____					
3 _____					
4 _____					
5 _____					
	<u>5</u>	= Total Cover			
	50% of total cover <u>2.5</u>	20% of total cover: <u>1</u>			

Remarks: (If observed, list morphological adaptations below).
Forested wetland that become scrub-shrub at outer edge. Buttressed tree trunks.

SOIL

Sampling Point: **04-WTL-16-wet**

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 ¹	Loc2		
0-4	10YR 2 / 1	100					silt loam	
4-6	10YR 2 / 1	95	2.5YR 4 / 6	5			silt loam	
6-12	10YR 4 / 5	100					silt loam	gley

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-16-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 8

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-16-wet

Bottomland hardwood portion of wetland.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 7, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-16-upl
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): upland terrace Local relief (concave, convex, none): convex Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.082896 Long: -77.385253 Datum: NAD-1983
 Soil Map Unit Name: Altavista fine sandy loam, 2 to 6 percent slopes, very rarely flooded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydic Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	
Remarks: This upland data point is on an upland terrace. Field Sheet 11-WTL-02-Up2 and 11-WTL-03-up1 Team A.			

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
--	---

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

Remarks: **Area is well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-16-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	Fagus grandifolia	20	Y	FACU
2	Quercus velutina	10	Y	
3				
4				
5				
6				
7				
8				

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	Fagus grandifolia	50	Y	FACU
2	Magnolia spp.	15	Y	
3	Ilex opaca	5	N	FAC
4				
5				
6				
7				
8				

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	Magnolia spp.	5	Y	
2	Fagus grandifolia	5	Y	FACU
3	Smilax spp.	5	Y	
4				
5				
6				
7				
8				
9				
10				
11				
12				

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 7 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A)

Prevalence Index worksheet

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>75</u>	x 4 = <u>300</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>80</u> (A)	<u>315</u> (B)

Prevalence Index = B/A = 3.94

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0
 - Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).
Not a lot of herbaceous vegetation.

SOIL

Sampling Point: **04-WTL-16-upl**

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 ¹	Loc ²		
0-3	10YR 3 / 2						silt loam	lots of organic material
3-8	10YR 4 / 4						silt loam	
8-15	10YR 5 / 6						silt loam	some fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 **X**

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 7, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-71-upl
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): <2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.083243 Long: -77.385687 Datum: NAD-1983
 Soil Map Unit Name: Altavista fine sandy loam, 2 to 6 percent slopes, very rarely flooded NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Data sheet in the bottomland hardwood portion of the wetland. Field Sheet 11-WTL-03-wet2 Team A.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u>X</u> High Water Table (A2)	<u> </u> Aquatic Fauna (B13)
<u>X</u> Saturation (A3)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Water Marks (B1)	<u> </u> Marl Deposits (B15) (LRR U)
<u> </u> Sediment Deposits (B2)	<u> </u> Hydrogen Sulfide Odor (C1)
<u> </u> Drift Deposits (B3)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Presence of Reduced Iron (C4)
<u> </u> Iron Deposits (B5)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Thin Muck Surface (C7)
<u>X</u> Water-Stained Leaves (B9)	<u> </u> Other (Explain in Remarks)
	<u> </u> Dry-Season Water Table (C2)
	<u> </u> Crayfish Burrows (C8)
	<u> </u> Saturation Visible on Aerial Imagery (C9)
	<u> </u> Geomorphic Position (D2)
	<u> </u> Shallow Aquitard (D3)
	<u> </u> FAC-Neutral Test (D5)
	<u> </u> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	--

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

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-71-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>Betula nigra</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A)	
2 <u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	Total Number of Dominant Species Across all Strata: <u>7</u> (B)	
3 <u>Liquidambar styraciflua</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)	
4 <u>Liriodendron tulipifera</u>	<u>5</u>	<u>N</u>	<u>FACU</u>		
5 _____					
6 _____					
7 _____					
8 _____					
<u>40</u> = Total Cover 50% of total cover <u>20</u> 20% of total cover: <u>8</u>				Prevalence Index worksheet	
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				Total % Cover of: _____ Multiply by: _____	
1 <u>Ilex opaca</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	OBL species <u>0</u> x 1 = <u>0</u>	
2 <u>Acer rubrum</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	FACW species <u>20</u> x 2 = <u>40</u>	
3 <u>Liquidambar styraciflua</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	FAC species <u>135</u> x 3 = <u>405</u>	
4 _____				FACU species <u>8</u> x 4 = <u>32</u>	
5 _____				UPL species <u>0</u> x 5 = <u>0</u>	
6 _____				Column totals <u>163</u> (A) <u>477</u> (B)	
7 _____				Prevalence Index = B/A = <u>2.93</u>	
8 _____				Hydrophytic Vegetation Indicators:	
<u>15</u> = Total Cover 50% of total cover <u>7.5</u> 20% of total cover: <u>3</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 <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
Herb Stratum (Plot Size: <u>5' radius</u>)				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
1 <u>Chasmanthium latifolium</u>	<u>90</u>	<u>Y</u>	<u>FAC</u>	Definitions of Four Vegetation Strata:	
2 <u>Smilax spp.</u>	<u>5</u>	<u>N</u>		Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
3 <u>Ilex opaca</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	Sapling/shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
4 <u>Acer rubrum</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
5 <u>Lonicera japonica</u>	<u>3</u>	<u>N</u>	<u>FACU</u>	Woody vines - All woody vines greater than 3.28 ft in height.	
6 <u>Carex spp.</u>	<u>3</u>	<u>N</u>			
7 _____					
8 _____					
9 _____					
10 _____					
11 _____					
12 _____					
<u>111</u> = Total Cover 50% of total cover <u>55.5</u> 20% of total cover: <u>22.2</u>					
Woody Vine Stratum (Plot Size: <u>30' radius</u>)				Hydrophytic vegetation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
1 <u>Toxicodendron radicans</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>		
2 _____					
3 _____					
4 _____					
5 _____					
<u>5</u> = Total Cover 50% of total cover <u>2.5</u> 20% of total cover: <u>1</u>					

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: **04-WTL-71-upl**

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 ¹	Loc2		
0-4	10YR 4 / 3	95	7.5YR 5 / 6	5			silty clay	
4-10	10YR 3 / 2	100					silty clay	
10-12	2.5Y 4 / 2	90	2.5YR 4 / 6	10			silty clay	
12-18	5Y 4 / 1	85	2.5YR 5 / 6	15			silty clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

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

Restrictive Layer (if observed):
 Type: clay
 Depth (inches): 12 Hydric soil present? Yes X No _____

Remarks: **Some gravel present at 8 inches. Very dense clay present at 12"**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-71-upl

Project/Site: 04-WTL-71-upl

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 4

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-71-upl Bottomland hardwoods in wetland.



04-WTL-71-upl Typical wetland habitat.



04-WTL-71-upl Small depression in wetland.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 7, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-17-upl
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): upland terrace Local relief (concave, convex, none): convex Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.082896 Long: -77.385253 Datum: NAD-1983
 Soil Map Unit Name: Altavista fine sandy loam, 2 to 6 percent slopes, very rarely flooded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: This upland data point is on an upland terrace. Field Sheet 11-WTL-02-Up2 and 11-WTL-03-up1 Team A.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Area is well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-17-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1 <u>Fagus grandifolia</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</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>0.00%</u> (A)
2 <u>Quercus velutina</u>	<u>10</u>	<u>Y</u>		
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
<u>30</u> = Total Cover 50% of total cover <u>15</u> 20% of total cover: <u>6</u>				Prevalence Index worksheet 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>75</u> x 4 = <u>300</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>80</u> (A) <u>315</u> (B) Prevalence Index = B/A = <u>3.94</u> Hydrophytic Vegetation Indicators: <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 <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				
1 <u>Fagus grandifolia</u>	<u>50</u>	<u>Y</u>	<u>FACU</u>	
2 <u>Magnolia spp.</u>	<u>15</u>	<u>Y</u>		
3 <u>Ilex opaca</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
<u>70</u> = Total Cover 50% of total cover <u>35</u> 20% of total cover: <u>14</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)				
1 <u>Magnolia spp.</u>	<u>5</u>	<u>Y</u>		
2 <u>Fagus grandifolia</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	
3 <u>Smilax spp.</u>	<u>5</u>	<u>Y</u>		
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
9 _____				
10 _____				
11 _____				
12 _____				
<u>15</u> = Total Cover 50% of total cover <u>7.5</u> 20% of total cover: <u>3</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)				
1 <u>none</u>				
2 _____				
3 _____				
4 _____				
5 _____				
<u>0</u> = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Hydrophytic vegetation present? Yes _____ No <u>X</u>				

Remarks: (If observed, list morphological adaptations below).
Not a lot of herbaceous vegetation.

SOIL

Sampling Point: **04-WTL-17-upl**

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 ¹	Loc ²		
0-3	10YR 3 / 2						silt loam	lots of organic material
3-8	10YR 4 / 4						silt loam	
8-15	10YR 5 / 6						silt loam	some fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators 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 X

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 7, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-18-wet-1
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.082909 Long: -77.385347 Datum: NAD-1983
 Soil Map Unit Name: Altavista fine sandy loam, 2 to 6 percent slopes, very rarely flooded NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is generally a PEM railroad ditch wetland that has a PFO component. This data point is the PFO part. Field Sheet 11-WTL-02-wet1 Team A.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u>X</u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u>X</u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Aquatic Fauna (B13)	<u> </u> Moss Trim Lines (B16)
<u> </u> Marl Deposits (B15) (LRR U)	<u> </u> Dry-Season Water Table (C2)
<u>X</u> Hydrogen Sulfide Odor (C1)	<u> </u> Crayfish Burrows (C8)
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Presence of Reduced Iron (C4)	<u> </u> Geomorphic Position (D2)
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	<u> </u> Shallow Aquitard (D3)
<u> </u> Thin Muck Surface (C7)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Other (Explain in Remarks)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Water Marks (B1)	
<u> </u> Sediment Deposits (B2)	
<u> </u> Drift Deposits (B3)	
<u> </u> Algal Mat or Crust (B4)	
<u> </u> Iron Deposits (B5)	
<u> </u> Inundation Visible on Aerial Imagery (B7)	
<u> </u> Water-Stained Leaves (B9)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>4 inches</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	--

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

Remarks: **Wetland hydrology due to seep. May be some interconnection present.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-18-wet-1**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>Betula nigra</u>	<u>20</u>		FACW	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</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>50.00%</u> (A/B)	
4 _____				Prevalence Index worksheet	
5 _____				Total % Cover of: _____ Multiply by: _____	
6 _____				OBL species <u>0</u> x 1 = <u>0</u>	
7 _____				FACW species <u>28</u> x 2 = <u>56</u>	
8 _____				FAC species <u>35</u> x 3 = <u>105</u>	
	<u>20</u> = Total Cover			FACU species <u>0</u> x 4 = <u>0</u>	
	50% of total cover <u>10</u>	20% of total cover: <u>4</u>		UPL species <u>0</u> x 5 = <u>0</u>	
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				Column totals <u>63</u> (A) <u>161</u> (B)	
1 <u>Acer rubrum</u>	<u>30</u>	Y	FAC	Prevalence Index = B/A = <u>2.56</u>	
2 <u>Quercus phellos</u>	<u>8</u>	N	FACW	Hydrophytic Vegetation Indicators:	
3 <u>Liquidambar styraciflua</u>	<u>5</u>	N	FAC	<input type="checkbox"/> 1 -Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
4 _____					
5 _____					
6 _____					
7 _____					
8 _____					
	<u>43</u> = Total Cover			Definitions of Four Vegetation Strata:	
	50% of total cover <u>21.5</u>	20% of total cover: <u>8.6</u>		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 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 vines - All woody vines greater than 3.28 ft in height.	
Herb Stratum (Plot Size: <u>5' radius</u>)					
1 <u>Smilax spp.</u>	<u>50</u>	Y			
2 _____					
3 _____					
4 _____					
5 _____					
6 _____					
7 _____					
8 _____					
9 _____					
10 _____					
11 _____					
12 _____					
	<u>50</u> = Total Cover				
	50% of total cover <u>25</u>	20% of total cover: <u>10</u>			
Woody Vine Stratum (Plot Size: <u>30' radius</u>)					
1 <u>none</u>					
2 _____					
3 _____					
4 _____					
5 _____					
	<u>0</u> = Total Cover				
	50% of total cover <u>0</u>	20% of total cover: <u>0</u>			

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: **04-WTL-18-wet-1**

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 ¹	Loc2		
0-6	2.5YR	4 / 1	100					silt loam	
6-10	2.5YR	2.5 / 1	100					silt loam	
10-12	2.5Y	5 / 1	95	5YR	4 / 6	5		silt loam	
12-15	5Y	5 / 1	95	10YR	5 / 6	5		silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils ³ :		
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)			
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)			
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)			
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)			
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)			
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)			
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)				
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)				
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)				
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)				
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)				
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)				
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)				
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)					

³Indicators 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:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: _____

Project/Site: _____

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 5

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-18-wet-1 BH component of wetland.



04-WTL-18-wet-1 Inundation in wetland.



04-WTL-18-wet-1 Wetland soil core



04-WTL-18-wet-1 Wetland soil

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 7, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-18-upl-1
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): upland terrace Local relief (concave, convex, none): convex Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.082896 Long: -77.385253 Datum: NAD-1983
 Soil Map Unit Name: Altavista fine sandy loam, 2 to 6 percent slopes, very rarely flooded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	
Remarks: This upland data point is on an upland terrace. Field Sheet 11-WTL-02-Up2 and 11-WTL-03-up1 Team A.			

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
	<u> </u> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Area is well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-18-upl-1**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	Fagus grandifolia	20	Y	FACU
2	Quercus velutina	10	Y	
3				
4				
5				
6				
7				
8				

Total Cover: 30
 50% of total cover: 15 20% of total cover: 6

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	Fagus grandifolia	50	Y	FACU
2	Magnolia spp.	15	Y	
3	Ilex opaca	5	N	FAC
4				
5				
6				
7				
8				

Total Cover: 70
 50% of total cover: 35 20% of total cover: 14

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	Magnolia spp.	5	Y	
2	Fagus grandifolia	5	Y	FACU
3	Smilax spp.	5	Y	
4				
5				
6				
7				
8				
9				
10				
11				
12				

Total Cover: 15
 50% of total cover: 7.5 20% of total cover: 3

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

Total Cover: 0
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 7 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A)

Prevalence Index worksheet

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>75</u>	x 4 = <u>300</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>80</u> (A)	<u>315</u> (B)

Prevalence Index = B/A = 3.94

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0
 - Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).
Not a lot of herbaceous vegetation.

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 ¹	Loc ²		
0-3	10YR 3 / 2						silt loam	lots of organic material
3-8	10YR 4 / 4						silt loam	
8-15	10YR 5 / 6						silt loam	some fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 7, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-18-wet-2
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.082859 Long: -77.385306 Datum: NAD-1983
 Soil Map Unit Name: Altavista fine sandy loam, 2 to 6 percent slopes, very rarely flooded NWI classification: PEM
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Emergent wetland in depression. Field Sheet 11-WTL-02-wet2 Team A.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>2 inches</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Depression. Hydrology may be due to seep.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-18-wet-2**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				Dominance Test worksheet: 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				
8				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				Prevalence Index worksheet 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>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>10</u> (A) <u>10</u> (B) Prevalence Index = B/A = <u>1.00</u>
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				
2				
3				
4				
5				
6				
7				
8				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Panicum spp.</u>	<u>15</u>	<u>Y</u>		Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 -Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2 <u>Carex spp.</u>	<u>10</u>	<u>Y</u>		
3 <u>Juncus effusus</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	
4 <u>Scirpus georgianus</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	
5				
6				
7				
8				
9				
10				
11				
12				
50% of total cover <u>17.5</u> 20% of total cover: <u>7</u>				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 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 vines - All woody vines greater than 3.28 ft in height.
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				
2				
3				
4				
5				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				Hydrophytic vegetation present? Yes <u>X</u> No _____

Remarks: (If observed, list morphological adaptations below).
Depression with emergent vegetation.

SOIL

Sampling Point: **04-WTL-18-wet-**

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)		%		
0-6	2.5YR	4 / 1	100					silt loam
6-10	2.5YR	2.5 / 1	100					silt loam
10-12	2.5Y	5 / 1	95	5YR	4 / 6	5		silt loam
12-15	5Y	5 / 1	95	10YR	5 / 6	5		silt loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils ³ :		
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)			
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)			
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)			
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)			
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)			
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)			
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)				
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)				
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)				
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)				
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)				
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)				
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)				
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)					

³Indicators 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:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-18-wet-2

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	0	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 3

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-18-wet-2 View of PEM portion of wetland



04-WTL-18-wet-2 View of PEM portion of wetland



04-WTL-18-wet-2 View of PEM portion of wetland



04-WTL-18-wet-2 View of PEM portion of wetland



04-WTL-18-wet-2 Wetland soil core



04-WTL-18-wet-2 Wetland soil

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-18-upl-2**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	Fagus grandifolia	20	Y	FACU
2	Quercus velutina	10	Y	
3				
4				
5				
6				
7				
8				

Total Cover: 30

50% of total cover: 15 20% of total cover: 6

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	Fagus grandifolia	50	Y	FACU
2	Magnolia spp.	15	Y	
3	Ilex opaca	5	N	FAC
4				
5				
6				
7				
8				

Total Cover: 70

50% of total cover: 35 20% of total cover: 14

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	Magnolia spp.	5	Y	
2	Fagus grandifolia	5	Y	FACU
3	Smilax spp.	5	Y	
4				
5				
6				
7				
8				
9				
10				
11				
12				

Total Cover: 15

50% of total cover: 7.5 20% of total cover: 3

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

Total Cover: 0

50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 7 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A)

Prevalence Index worksheet

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>75</u>	x 4 = <u>300</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>80</u> (A)	<u>315</u> (B)

Prevalence Index = B/A = 3.94

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No X

Remarks: (If observed, list morphological adaptations below).

Not a lot of herbaceous vegetation.

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 ¹	Loc ²		
0-3	10YR 3 / 2						silt loam	lots of organic material
3-8	10YR 4 / 4						silt loam	
8-15	10YR 5 / 6						silt loam	some fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline Sampling Date: August 10, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-19-wet
 Investigator(s): L. Eggering & R. Porath Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Toe of ballast Local relief (concave, convex, none): Convex Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.075842 Long: -77.380329 Datum: NAD-1983
 Soil Map Unit Name: Tomotley-Roanoke complex, 0 to 2 percent slopes, rarely flooded NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This wetland has the requisite soils, hydrology, and plants to be considered a wetland. The soils within this wetland are strongly reduced. Field Sheet: 11-A-WTL-02-wet - rework area	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u>X</u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>To surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **The lower portion of the wetland is inundated up to two feet. The sample point was taken at the edge of the inundated area, where saturation was occurring. It is possible that a culvert, blocked by beaver dam-building activities, is causing surface water build-up in the area.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-19-wet**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Liquidambar styraciflua</u>	<u>60</u>	<u>Y</u>	<u>FAC</u>
2 <u>Pinus taeda</u>	<u>5</u>	<u>N</u>	<u>FAC</u>
3			
4			
5			
6			
7			
8			

65 = Total Cover
 50% of total cover: 32.5 20% of total cover: 13

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Clethra alnifolia</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>
2 <u>Pinus taeda</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3			
4			
5			
6			
7			
8			

20 = Total Cover
 50% of total cover: 10 20% of total cover: 4

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2 <u>Clethra alnifolia</u>	<u>3</u>	<u>Y</u>	<u>FACW</u>
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

13 = Total Cover
 50% of total cover: 6.5 20% of total cover: 2.6

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

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)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>13</u>	x 2 = <u>26</u>
FAC species <u>85</u>	x 3 = <u>255</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>98</u> (A)	<u>281</u> (B)

Prevalence Index = B/A = 2.87

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).

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 ¹	Loc2		
0-6	10YR	5.0 / 1	100					Sandy loam	
6-12	10YR	6 / 2	90	10YR	6 / 8	10		Sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils ³ :		
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)			
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)			
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)			
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)			
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)			
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)				
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)				
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)				
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)				
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)				
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)				
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)				
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)					

³Indicators 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: **Some coal ash is present in the top 2 inches of the core.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-19-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 8

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-19-wet PFO vegetation.



04-WTL-19-wet PFO vegetation.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline Sampling Date: August 10, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-19-upl
 Investigator(s): L. Eggering & R. Porath Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Slope of ballast Local relief (concave, convex, none): _____ Slope (%): 6%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.075763 Long: -77.380384 Datum: NAD-1983
 Soil Map Unit Name: Tomotley-Roanoke complex, 0 to 2 percent slopes, rarely flooded NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No _____ (If no, explain in Remarks.)
 Are vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "normal circumstances" present? Yes X No _____
 Are vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (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 <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: This upland point is moderately well-drained and lacks wetland hydrology.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input 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"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<input type="checkbox"/> Marl Deposits (B15) (LRR U)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes _____ No <u>X</u> Depth (inches): _____ Water table present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
---	---

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

Remarks: **This area is moderately well-drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-19-upl**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Pinus taeda	2	N	FAC
2 Liquidambar styraciflua	2	N	FAC
3 Ilex opaca	2	N	FAC
4			
5			
6			
7			
8			

6 = Total Cover
 50% of total cover: 3 20% of total cover: 1.2

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Lespedeza cuneata	75	Y	FACU
2 Setaria faberi	10	N	UPL
3 Achillea millefolium	5	N	FACU
4			
5			
6			
7			
8			
9			
10			
11			
12			

90 = Total Cover
 50% of total cover: 45 20% of total cover: 18

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index worksheet

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>6</u>	x 3 = <u>18</u>
FACU species <u>80</u>	x 4 = <u>320</u>
UPL species <u>10</u>	x 5 = <u>50</u>
Column totals <u>96</u> (A)	<u>388</u> (B)

Prevalence Index = B/A = 4.04

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No X

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 04-WTL-19-upl

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 ¹	Loc2		
0-12	10YR	3.0 / 1	100					Sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks: **Soils appear to be coal ash from the railroad ballast.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 7, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-20-wet-1
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): <2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.072471 Long: -77.379466 Datum: NAD-1983
 Soil Map Unit Name: Tomotley-Roanoke complex, 0 to 2 percent slopes, rarely flooded NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Depression in forest with slight herbaceous fringe. Field Sheet 11-WTL-01-wet1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u>X</u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u>X</u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>5</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	--

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

Remarks: **Surface water present. Probably receives groundwater seepage.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-20-wet-1**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Quercus palustris</u>	<u>20</u>		<u>FACW</u>	Dominance Test worksheet: 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>Quercus phellos</u>	<u>20</u>		<u>FACW</u>	
3 <u>Acer rubrum</u>	<u>10</u>		<u>FAC</u>	
4 <u>Betula nigra</u>	<u>5</u>		<u>FACW</u>	
5 _____				
6 _____				
7 _____				
8 _____				
<u>55</u> = Total Cover 50% of total cover <u>27.5</u> 20% of total cover: <u>11</u>				Prevalence Index worksheet Total % Cover of: Multiply by: OBL species <u>10</u> x 1 = <u>10</u> FACW species <u>55</u> x 2 = <u>110</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>90</u> (A) <u>195</u> (B) Prevalence Index = B/A = <u>2.17</u>
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Acer rubrum</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
2 _____				
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
<u>5</u> = Total Cover 50% of total cover <u>2.5</u> 20% of total cover: <u>1</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Dichanthelium dichotomum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
2 <u>Juncus effusus</u>	<u>5</u>	<u>Y</u>	<u>OBL</u>	
3 <u>Scirpus georgianus</u>	<u>5</u>	<u>Y</u>	<u>OBL</u>	
4 <u>Echinochloa muricata</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>	
5 <u>Carex intumescens</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>	
6 _____				
7 _____				
8 _____				
9 _____				
10 _____				
11 _____				
12 _____				
<u>30</u> = Total Cover 50% of total cover <u>15</u> 20% of total cover: <u>6</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				
2 _____				
3 _____				
4 _____				
5 _____				
<u>0</u> = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>				

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).
Strong tree stratum.

SOIL

Sampling Point: **04-WTL-20-wet-1**

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 ¹	Loc ²		
0-10	10YR 2 / 1	100					silt loam	
10-15	5Y 3 / 1	95	2.5YR 4 / 6	5			silty clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **Soils are very dark near surface. Transitions to more of a clay below 10 inches.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-20-wet-1

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 5

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-20-wet-1 Photo description.



04-WTL-20-wet-1 Photo description.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 7, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-20-upl-1
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 5%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.072432 Long: -77.379424 Datum: NAD-1983
 Soil Map Unit Name: Tomotley-Roanoke complex, 0 to 2 percent slopes, rarely flooded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: This is the upland data point that is moderately well drained. Field Sheet 11-WTL-01 Up1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Upland area is moderately well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-20-upl-1**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 Fagus grandifolia	40	Y	FACU	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</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>33.33%</u> (A)
2 Ilex opaca	20	Y	FAC	
3 Quercus velutina	20	Y		
4 Caria spp.	5	N		
5				
6				
7				
8				
50% of total cover <u>42.5</u> 20% of total cover: <u>17</u>				Prevalence Index worksheet 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>60</u> x 4 = <u>240</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>90</u> (A) <u>330</u> (B) Prevalence Index = B/A = <u>3.67</u>
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 Fagus grandifolia	20	Y	FACU	
2 Ilex opaca	10	Y	FAC	
3				
4				
5				
6				
7				
8				
50% of total cover <u>15</u> 20% of total cover: <u>6</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 Magnolia spp.	10	Y		
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 none				
2				
3				
4				
5				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
 Total Number of Dominant Species Across all Strata: 6 (B)
 Percent of Dominant Species that are OBL, FACW, or FAC: 33.33% (A)

Prevalence Index worksheet
 Total % Cover of: Multiply by:
 OBL species 0 x 1 = 0
 FACW species 0 x 2 = 0
 FAC species 30 x 3 = 90
 FACU species 60 x 4 = 240
 UPL species 0 x 5 = 0
 Column totals 90 (A) 330 (B)

 Prevalence Index = B/A = 3.67

Hydrophytic Vegetation Indicators:
1 -Rapid Test for Hydrophytic Vegetation
2 - Dominance Test is >50%
3 - Prevalence Index is ≤3.0
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No X

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: **04-WTL-20-upl-1**

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 ¹	Loc ²		
0-2	10YR 2 / 1						silt loam	lots of organic material
2-12	2.5Y 5 / 4						sandy loam	fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks: **Lots of organics. Soil is a tan color with dark organic surface.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 4, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-20-wet-2
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): oak flatland Local relief (concave, convex, none): concave Slope: 3%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.072416 Long: -77.379563 Datum: NAD-1983
 Soil Map Unit Name: Tomotley-Roanoke complex NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is a willow oak/pin oak flat that extends to the railroad ballast near the northeast end. It is much wetter than the mineral flat to the south. This is a high quality habitat. Field Sheet 11-A-WTL-06 wetDP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Soil is saturated at data point. Old access road adjacent to data point is a depression with standing water. Pockets of small ponded areas in this portion of the flat.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-20-wet-2**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Quercus phellos</u>	60	Y	FACW	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across all Strata: _____ (B) Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)
2 <u>Quercus palustris</u>	30	Y	FACW	
3 <u>Liquidambar styraciflua</u>	20	N	FAC	
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
110 = Total Cover 50% of total cover 55 20% of total cover: 22				Prevalence Index worksheet Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column totals _____ (A) _____ (B) Prevalence Index = B/A = _____ Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 -Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is >50% _____ 3 - Prevalence Index is ≤3.0 _____ Problematic Hydrophytic Vegetation ¹ (Explain)
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				
1 <u>Quercus phellos</u>	30	Y	FACW	
2 _____				
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
30 = Total Cover 50% of total cover 15 20% of total cover: 6				
Herb Stratum (Plot Size: <u>5' radius</u>)				
1 <u>Smilax spp.</u>	1			
2 _____				
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
9 _____				
10 _____				
11 _____				
12 _____				
1 = Total Cover 50% of total cover 0.5 20% of total cover: 0.2				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)				
1 <u>none</u>				
2 _____				
3 _____				
4 _____				
5 _____				
0 = Total Cover 50% of total cover 0 20% of total cover: 0				
Hydrophytic vegetation present? Yes <input checked="" type="checkbox"/> No _____				

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Remarks: (If observed, list morphological adaptations below).
Willow oak is dominant species with pin oak and some sweetgum mixed in. High quality wildlife habitat.

SOIL

Sampling Point: **04-WTL-20-wet-2**

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 ¹	Loc2		
0-3	10YR 2 / 2	100					loam	organics
3-12+	10YR 4 / 1	98	10YR 4 / 4	2			silty clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	(MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators 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: **Soils are depleted throughout the mineral flat but only saturated in the northern third of the area.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-20-wet-2

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	3	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 10

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-20-wet-2 North end of wetland facing north near ballast.



04-WTL-20-wet-2 View of upland/wetland interface.



04-WTL-20-wet-2 Sedges in BH wetland.



04-WTL-20-wet-2 Area ponded on old road.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 4, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-20-upl-2
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 5%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.072146 Long: -77.379952 Datum: NAD-1983
 Soil Map Unit Name: Tomotley-Roanoke complex, 0 to 2 percent slopes, rarely flooded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Data was taken after a recent 3-day rain event. This is the upland point south of wetland 6 on a slope. Although the soil colors indicated they are reduced, the area slopes and is well drained. Field Sheet 11-A-WTL-06 upDP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Area slopes to the south and is moderately well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-20-upl-2**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 Fagus grandifolia	100	Y	FACU	Dominance Test worksheet: 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)
2				
3				
4				
5				
6				
7				
8				
50% of total cover <u>50</u> 20% of total cover: <u>20</u> 100 = Total Cover				Prevalence Index worksheet 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>85</u> x 3 = <u>255</u> FACU species <u>100</u> x 4 = <u>400</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>185</u> (A) <u>655</u> (B) Prevalence Index = B/A = <u>3.54</u>
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 Pinus taeda	50	Y	FAC	
2 Ilex opaca	30	Y	FAC	
3				
4				
5				
6				
7				
8				
50% of total cover <u>40</u> 20% of total cover: <u>16</u> 80 = Total Cover				
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 none				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
50% of total cover <u>0</u> 20% of total cover: <u>0</u> 0 = Total Cover				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 Smilax rotundifolia	5	Y	FAC	
2				
3				
4				
5				
50% of total cover <u>2.5</u> 20% of total cover: <u>1</u> 5 = Total Cover				
Remarks: (If observed, list morphological adaptations below). Herb layer absent.				Hydrophytic vegetation present? Yes <u>X</u> No _____

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 ¹	Loc2		
0-4	10YR 3 / 1	100					loam	lots of organics
4-12	10YR 6 / 2	97	10YR 4 / 1	3			sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks: **Based on the soil colors the area has a reduced matrix.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline Sampling Date: August 10, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-21-wet
 Investigator(s): L. Eggering & R. Porath Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Toe of ballast Local relief (concave, convex, none): Concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.064962 Long: -77.376566 Datum: NAD-1983
 Soil Map Unit Name: Tomotley-Roanoke complex, 0 to 2 percent slopes, rarely flooded NWI classification: PFO/PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This wetland, north of Paige Road, has a variable boundary at times approaching the railroad ballast. Saturation reaches to the toe of the ballast. Field Sheet: 11-A-WTL-02-wet	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<input checked="" 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"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> FAC-Neutral Test (D5)
	<input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>4 inches</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	--

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

Remarks: **A large linear wetland runs along the railroad ballast. Saturation reaches to the toe of the ballast.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-21-wet**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Betula nigra	20	Y	FACW
2 Acer rubrum	10	Y	FAC
3			
4			
5			
6			
7			
8			

30 = Total Cover
 50% of total cover: **15** 20% of total cover: **6**

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Cephalanthus occidentalis	50	Y	OBL
2			
3			
4			
5			
6			
7			
8			

50 = Total Cover
 50% of total cover: **25** 20% of total cover: **10**

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Juncus effusus	40	Y	OBL
2 Campsis radicans	30	Y	FAC
3 Carex frankii	5	N	OBL
4 Scirpus cyperinus	5	N	OBL
5 Cephalanthus occidentalis	5	N	OBL
6			
7			
8			
9			
10			
11			
12			

85 = Total Cover
 50% of total cover: **42.5** 20% of total cover: **17**

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Campsis radicans	10	Y	FAC
2			
3			
4			
5			

10 = Total Cover
 50% of total cover: **5** 20% of total cover: **2**

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)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 105	x 1 = 105
FACW species 20	x 2 = 40
FAC species 50	x 3 = 150
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column totals 175 (A)	295 (B)

Prevalence Index = B/A = **1.69**

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 04-WTL-21-wet

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 ¹	Loc2		
0-3	10YR	3 / 1	100					Sand	Coal ash present.
3-12	10YR	6 / 1	90	10YR	6 / 8	10		Sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **A lot of coal ash is present in the top 3 inches of the core.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-21-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	3	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	2	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	3	

Total Score 13

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-21-wet PEM portion of wetland.



04-WTL-21-wet PEM in relation to the CSX ballast.



04-WTL-21-wet Flooded river birch in wetland.



04-WTL-21-wet PFO habitat in wetland.

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-21-upl**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Pinus taeda	10	Y	FAC
2			
3			
4			
5			
6			
7			
8			

10 = Total Cover
 50% of total cover: 5 20% of total cover: 2

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index worksheet

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>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>10</u>	(A) <u>30</u> (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).
Vegetation is primarily absent.

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 ¹	Loc2		
0-12								Ballast rock and coal ash

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks: **Wetland abuts the toe of the railroad ballast. The soils are composed of ballast rock and coal ash, impenetrable with a soil auger.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-22-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Quercus phellos</u>	<u>80</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: 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 <u>Pinus taeda</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
3 <u>Acer rubrum</u>	<u>20</u>	<u>N</u>	<u>FAC</u>	
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
50% of total cover <u>65</u> <u>130</u> = Total Cover 20% of total cover: <u>26</u>				Prevalence Index worksheet Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>80</u> x 2 = <u>160</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>160</u> (A) <u>400</u> (B) Prevalence Index = B/A = <u>2.50</u>
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Acer rubrum</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
2 _____				
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
50% of total cover <u>15</u> <u>30</u> = Total Cover 20% of total cover: <u>6</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Smilax spp.</u>	<u>5</u>	<u>Y</u>		
2 _____				
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
9 _____				
10 _____				
11 _____				
12 _____				
50% of total cover <u>2.5</u> <u>5</u> = Total Cover 20% of total cover: <u>1</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				
2 _____				
3 _____				
4 _____				
5 _____				
50% of total cover <u>0</u> <u>0</u> = Total Cover 20% of total cover: <u>0</u>				
Remarks: (If observed, list morphological adaptations below). <p style="text-align:center;">Dominated by willow oak and loblolly pine. Pines tend to be on the higher areas.</p>				

Hydrophytic Vegetation Indicators:
 1 -Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

SOIL

Sampling Point: **04-WTL-22-wet**

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 ¹	Loc2		
0-3	10YR 2 / 1	100					loam	organics
3-12+	10YR 5 / 1	95	10YR 5 / 6	5			silty clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **Soils significantly reduced. Large river birch wetland east of tracks.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-22-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	3	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 11

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-22-wet View of pine flat



04-WTL-22-wet Large willow oak



04-WTL-22-wet View of wetland with possible ditching from previous logging activities.



04-WTL-22-wet View of wetland

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 4, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-22-upl
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): pine flat Local relief (concave, convex, none): convex Slope (%): 15%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.064229 Long: -77.376751 Datum: NAD-1983

Soil Map Unit Name: Tomotley-Roanoke complex NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Data point taken on raised area between railroad and WTL-05. Soil has been influenced by railroad activities. Soil is coal-like, gritty, and well drained. Field Sheet 11-A-WTL-05 upDP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Soil is not saturated, well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-22-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 Pinus taeda	100	Y	FAC	Dominance Test worksheet: 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)
2				
3				
4				
5				
6				
7				
8				
50% of total cover <u>50</u> 20% of total cover: <u>20</u>				Prevalence Index worksheet Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>30</u> x 2 = <u>60</u> FAC species <u>110</u> x 3 = <u>330</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>140</u> (A) <u>390</u> (B)
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				Prevalence Index = B/A = <u>2.79</u> Hydrophytic Vegetation Indicators: ___ 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 ___ Problematic Hydrophytic Vegetation ¹ (Explain)
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				¹ 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 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 vines - All woody vines greater than 3.28 ft in height.
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				Hydrophytic vegetation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				Hydrophytic vegetation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: **04-WTL-22-upl**

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 ¹	Loc2		
0-12	10YR 2 / 1	100					sand	coal-like, gritty

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks: **Soil is coal-like and gritty. Remnants from fill used on railroad.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 4, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-23-wet
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): concave 5 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.061098 Long: -77.376331 Datum: NAD-1983
 Soil Map Unit Name: Tomotley-Roanoke complex NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Old drainage ditch with wetland plants. Drainage ditch runs along railroad and drains into 11-A-STR-03 through culvert. Field Sheet 11-A-WTL-07 wetDP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u>X</u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Surface water present within old drainage ditch. Soils are saturated.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-23-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 Pinus taeda	30	Y	FAC	Dominance Test worksheet: 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 Liquidambar styraciflua	20	Y	FAC	
3				
4				
5				
6				
7				
8				
50% of total cover <u>50</u>		= Total Cover		Prevalence Index worksheet Total % Cover of: Multiply by: OBL species <u>70</u> x 1 = <u>70</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>50</u> x 3 = <u>150</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>220</u> (B)
20% of total cover: <u>10</u>				
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				
1 none				Prevalence Index = B/A = <u>1.83</u> Hydrophytic Vegetation Indicators: <u> </u> 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 <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)
2				
3				
4				
5				
6				
7				
8				
50% of total cover <u>0</u>		= Total Cover		¹ 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 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 vines - All woody vines greater than 3.28 ft in height.
20% of total cover: <u>0</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)				
1 Scirpus fluviatilis	70	Y	OBL	Hydrophytic vegetation present? Yes <u>X</u> No <u> </u>
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
50% of total cover <u>70</u>		= Total Cover		
20% of total cover: <u>14</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)				
1 none				
2				
3				
4				
5				
50% of total cover <u>0</u>		= Total Cover		
20% of total cover: <u>0</u>				

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: **04-WTL-23-wet**

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 ¹	Loc ²		
0-3	10YR 3 / 1	100					loam	organics
3-12	10YR 3 / 1	90	10YR 5 / 6	10			sandy clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **Soils have been influenced by railroad activities. Soils had the coal-like material throughout the core sample.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-23-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 5

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-23-wet View of wetland facing railroad



04-WTL-23-wet View of wetland facing railroad



04-WTL-23-wet Wetland soil

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 4, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-23-upl
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 5%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.060992 Long: -77.376322 Datum: NAD-1983
 Soil Map Unit Name: Tomotley-Roanoke complex NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil X, or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Upland point taken on a bank of the ditch wetland. Soil has been influenced by railroad activities. Soil is coal-like and gritty, well drained. Field Sheet 11-A-WTL-07 upDP1.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-23-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1 <u>Pinus taeda</u>	80	Y	FAC	Dominance Test worksheet: 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)														
2																		
3																		
4																		
5																		
6																		
7																		
8																		
80 = Total Cover 50% of total cover <u>40</u> 20% of total cover: <u>16</u>				Prevalence Index worksheet <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>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>115</u></td> <td>x 3 = <u>345</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>115</u></td> <td>(A) <u>345</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.00</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>115</u>	x 3 = <u>345</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column totals <u>115</u>	(A) <u>345</u> (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>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column totals <u>115</u>	(A) <u>345</u> (B)																	
20 = Total Cover 50% of total cover <u>10</u> 20% of total cover: <u>4</u>																		
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)																		
1 <u>Liquidambar styraciflua</u>	20	Y	FAC															
2																		
3																		
4																		
5																		
6																		
7																		
8																		
20 = Total Cover 50% of total cover <u>10</u> 20% of total cover: <u>4</u>																		
Herb Stratum (Plot Size: <u>5' radius</u>)																		
1 <u>none</u>																		
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		
0 = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>																		
Woody Vine Stratum (Plot Size: <u>30' radius</u>)																		
1 <u>Smilax rotundifolia</u>	15	Y	FAC															
2																		
3																		
4																		
5																		
15 = Total Cover 50% of total cover <u>7.5</u> 20% of total cover: <u>3</u>																		

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No X

Remarks: (If observed, list morphological adaptations below).

Herb layer absent.

SOIL

Sampling Point: **04-WTL-23-up1**

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 ¹		
0-10	10YR 3 / 1	100					sand	coal-like
10-12+	10YR 3 / 1	70		10YR 4 / 1	30		silty clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators 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 X

Remarks: **Soils influenced by railroad activities, coal-like and gritty.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline Sampling Date: August 12, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-24-wet
 Investigator(s): L. Eggering & R. Porath Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Ponded swale Local relief (concave, convex, none): Concave Slope (%): 0%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.057249 Long: -77.375477 Datum: NAD-1983
 Soil Map Unit Name: Chastain silt loam, 0 to 2 percent slopes, ponded NWI classification: PFO/PSS

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This wetland south of Paige Road is located at the edge of a pond. Twenty feet away from the sample point, buttonbush margins begin. The wetland boundary is fairly well-defined. Field Sheet: 11-A-WTL-04-wet	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u>X</u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>12+ inches</u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	---

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

Remarks: **The sample point is located in a saturated area adjacent to surface water. The soils are saturated to the surface.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-24-wet**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Acer rubrum	40	Y	FAC
2 Pinus taeda	10	N	FAC
3 Quercus phellos	10	N	FACW
4			
5			
6			
7			
8			

60 = Total Cover
 50% of total cover: **30** 20% of total cover: **12**

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Cephalanthus occidentalis	20	Y	OBL
2 Acer rubrum	10	Y	FAC
3			
4			
5			
6			
7			
8			

30 = Total Cover
 50% of total cover: **15** 20% of total cover: **6**

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Campsis radicans	30	Y	FAC
2 Juncus effusus	20	Y	OBL
3 Dicanthelium clandestinum	15	Y	FACW
4 Carex albicans	5	N	FAC
5			
6			
7			
8			
9			
10			
11			
12			

70 = Total Cover
 50% of total cover: **35** 20% of total cover: **14**

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Campsis radicans	10	Y	FAC
2			
3			
4			
5			

10 = Total Cover
 50% of total cover: **5** 20% of total cover: **2**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **7** (A)

Total Number of Dominant Species Across all Strata: **7** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **100.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 40	x 1 = 40
FACW species 25	x 2 = 50
FAC species 105	x 3 = 315
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column totals 170 (A)	405 (B)

Prevalence Index = B/A = **2.38**

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).
Vegetation transitions to a buttonbush margin approximately 20 feet from the sample point.

SOIL

Sampling Point: 04-WTL-24-wet

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 ¹	Loc2		
0-12	10YR 3 / 1	98	10YR 5 / 4				Sand	Coal ash present in top 2"

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input checked="" type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **In the top two inches of the soil, a significant amount of coal ash is present, but the soils are clearly reduced.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-24-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	2	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 11

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-24-wet PFO portion of wetland.



04-WTL-24-wet PFO/PSS portion of wetland south of Paige Road.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline Sampling Date: August 12, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-24-upl
 Investigator(s): L. Eggering & R. Porath Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Slope of ballast Local relief (concave, convex, none): none Slope (%): 5%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.057223 Long: -77.375566 Datum: NAD-1983
 Soil Map Unit Name: Bibb-Chastain complex, 0 to 2 percent slopes, frequently flooded NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: This upland point is two feet higher than the wetland point. This is a moderately well-drained area.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
--	--

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

Remarks: **This wetland is moderately well-drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-24-upl**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	
1	Dichanthelium clandestinum	85	Y	FACW
2	Phytolacca americana	5	N	FACU
3	Daucus carota	5	N	UPL
4	Carex spp.	5	N	
5	Eupatorium capillifolium	3	N	FACU
6				
7				
8				
9				
10				
11				
12				

103 = Total Cover
 50% of total cover: **51.5** 20% of total cover: **20.6**

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)
 Total Number of Dominant Species Across all Strata: _____ (B)
 Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet
 Total % Cover of: _____ Multiply by: _____
 OBL species _____ x 1 = _____
 FACW species _____ x 2 = _____
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column totals _____ (A) _____ (B)
 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
 1 -Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 Problematic Hydrophytic Vegetation¹ (Explain)

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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No _____

Remarks: (If observed, list morphological adaptations below).
Carex had no flowering parts to assist with identification to species.

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 ¹	Loc2		
0-6	10YR	4 / 2	100					Sand	
6-12	10YR	3 / 1	95	10YR	5 / 6	5		Sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks: **The top six inches of the soil core appeared to contain coal ash. This is not a hydric soil.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline Sampling Date: August 12, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-25-wet
 Investigator(s): L. Eggering & R. Porath Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Ponded swale Local relief (concave, convex, none): Concave Slope (%): 0%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.057249 Long: -77.375477 Datum: NAD-1983
 Soil Map Unit Name: Chastain silt loam, 0 to 2 percent slopes, ponded NWI classification: PFO/PSS

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This wetland south of Paige Road is located at the edge of a pond. Twenty feet away from the sample point, buttonbush margins begin. The wetland boundary is fairly well-defined. The same datasheet was used for both 04-WTL-24 and 04-WTL-25; the wetland is hydrologically connected via a culvert that runs underneath the railway. Field Sheet: 11-A-WTL-04-wet	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	___ Surface Soil Cracks (B6)
<u>X</u> Surface Water (A1)	___ Sparsely Vegetated Concave Surface (B8)
___ High Water Table (A2)	___ Drainage Patterns (B10)
<u>X</u> 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)	___ Geomorphic Position (D2)
___ Iron Deposits (B5)	___ Shallow Aquitard (D3)
___ Inundation Visible on Aerial Imagery (B7)	___ FAC-Neutral Test (D5)
___ Water-Stained Leaves (B9)	___ Sphagnum moss (D8) (LRR T, U)
___ Aquatic Fauna (B13)	
___ Marl Deposits (B15) (LRR U)	
___ Hydrogen Sulfide Odor (C1)	
___ Oxidized Rhizospheres on Living Roots (C3)	
___ Presence of Reduced Iron (C4)	
___ Recent Iron Reduction in Tilled Soils (C6)	
___ Thin Muck Surface (C7)	
___ Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>12+ inches</u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	--

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

Remarks: **The sample point is located in a saturated area adjacent to surface water. The soils are saturated to the surface.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-25-wet**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Acer rubrum	40	Y	FAC
2 Pinus taeda	10	N	FAC
3 Quercus phellos	10	N	FACW
4			
5			
6			
7			
8			

60 = Total Cover
 50% of total cover: **30** 20% of total cover: **12**

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Cephalanthus occidentalis	20	Y	OBL
2 Acer rubrum	10	Y	FAC
3			
4			
5			
6			
7			
8			

30 = Total Cover
 50% of total cover: **15** 20% of total cover: **6**

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Campsis radicans	30	Y	FAC
2 Juncus effusus	20	Y	OBL
3 Dicanthelium clandestinum	15	Y	FACW
4 Carex albicans	5	N	FAC
5			
6			
7			
8			
9			
10			
11			
12			

70 = Total Cover
 50% of total cover: **35** 20% of total cover: **14**

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Campsis radicans	10	Y	FAC
2			
3			
4			
5			

10 = Total Cover
 50% of total cover: **5** 20% of total cover: **2**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **7** (A)

Total Number of Dominant Species Across all Strata: **7** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **100.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 40	x 1 = 40
FACW species 25	x 2 = 50
FAC species 105	x 3 = 315
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column totals 170 (A)	405 (B)

Prevalence Index = B/A = **2.38**

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).
Vegetation transitions to a buttonbush margin approximately 20 feet from the sample point.

SOIL

Sampling Point: 04-WTL-25-wet

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 ¹	Loc ²		
0-12	10YR	3 / 1	98	10YR	5 / 4			Sand	Coal ash present in top 2"

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input checked="" type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **In the top two inches of the soil, a significant amount of coal ash is present, but the soils are clearly reduced.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-25-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	2	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 11

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-25-wet PFO portion of wetland.



04-WTL-25-wet PFO/PSS portion of wetland south of Paige Road.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline Sampling Date: August 12, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-25-upl
 Investigator(s): L. Eggering & R. Porath Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Slope of ballast Local relief (concave, convex, none): none Slope (%): 5%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.057223 Long: -77.375566 Datum: NAD-1983
 Soil Map Unit Name: Bibb-Chastain complex, 0 to 2 percent slopes, frequently flooded NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: This upland point is two feet higher than the wetland point. This is a moderately well-drained area. The same datasheet was used for both 04-WTL-24 and 04-WTL-25; the wetland is hydrologically connected via a culvert that runs underneath the railway.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
--	--

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

Remarks: **This wetland is moderately well-drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-25-upl**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	
1	Dichanthelium clandestinum	85	Y	FACW
2	Phytolacca americana	5	N	FACU
3	Daucus carota	5	N	UPL
4	Carex spp.	5	N	
5	Eupatorium capillifolium	3	N	FACU
6				
7				
8				
9				
10				
11				
12				

103 = Total Cover
 50% of total cover: **51.5** 20% of total cover: **20.6**

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)
 Total Number of Dominant Species Across all Strata: _____ (B)
 Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet
 Total % Cover of: _____ Multiply by: _____
 OBL species _____ x 1 = _____
 FACW species _____ x 2 = _____
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column totals _____ (A) _____ (B)
 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
 1 -Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 Problematic Hydrophytic Vegetation¹ (Explain)

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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No _____

Remarks: (If observed, list morphological adaptations below).
Carex had no flowering parts to assist with identification to species.

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 ¹	Loc2		
0-6	10YR	4 / 2	100					Sand	
6-12	10YR	3 / 1	95	10YR	5 / 6	5		Sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks: **The top six inches of the soil core appeared to contain coal ash. This is not a hydric soil.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 3, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-26-wet-1
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): Mattaponi floodplain Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.049123 Long: -77.376463 Datum: NAD-1983
 Soil Map Unit Name: Bibb-Chastain complex NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Wetland is on the northeast side of the Mattaponi River. High quality bottomland forest wetland. The south end tapers into a slough that drains to the Mattaponi River. A high American beech ridge to the west was excluded. Field Sheet 11-A-WTL-03 wetDP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations:	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>12 inches</u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	

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

Remarks: **Surface water is present throughout a significant portion of the wetland. Soils are saturated. Shallow root system on fallen trees were observed.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-26-wet-1**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1 <u>Quercus bicolor</u>	<u>40</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: 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>Fraxinus pennsylvanica</u>	<u>10</u>	<u>N</u>	<u>FACW</u>															
3 <u>Acer rubrum</u>	<u>10</u>	<u>N</u>	<u>FAC</u>															
4 <u>Quercus phellos</u>	<u>5</u>	<u>N</u>	<u>FACW</u>															
5 _____																		
6 _____																		
7 _____																		
8 _____																		
<u>65</u> = Total Cover 50% of total cover <u>32.5</u> 20% of total cover: <u>13</u>				Prevalence Index worksheet <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>2</u></td> <td>x 1 = <u>2</u></td> </tr> <tr> <td>FACW species <u>55</u></td> <td>x 2 = <u>110</u></td> </tr> <tr> <td>FAC species <u>15</u></td> <td>x 3 = <u>45</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>72</u></td> <td>(A) <u>157</u> (B)</td> </tr> </table> <p style="text-align:right;">Prevalence Index = B/A = <u>2.18</u></p> Hydrophytic Vegetation Indicators: <u> </u> 1 -Rapid Test for Hydrophytic Vegetation <u> </u> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)	Total % Cover of:	Multiply by:	OBL species <u>2</u>	x 1 = <u>2</u>	FACW species <u>55</u>	x 2 = <u>110</u>	FAC species <u>15</u>	x 3 = <u>45</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column totals <u>72</u>	(A) <u>157</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>2</u>	x 1 = <u>2</u>																	
FACW species <u>55</u>	x 2 = <u>110</u>																	
FAC species <u>15</u>	x 3 = <u>45</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column totals <u>72</u>	(A) <u>157</u> (B)																	
<u>0</u> = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>																		
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)																		
1 <u>none</u>																		
2 _____																		
3 _____																		
4 _____																		
5 _____																		
6 _____																		
7 _____																		
8 _____																		
<u>0</u> = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>																		
Herb Stratum (Plot Size: <u>5' radius</u>)																		
1 <u>Unknown (collected)</u>	<u>25</u>	<u>Y</u>																
2 <u>Carex spp.</u>	<u>20</u>	<u>Y</u>																
3 <u>Juncus effusus</u>	<u>2</u>	<u>N</u>	<u>OBL</u>															
4 _____																		
5 _____																		
6 _____																		
7 _____																		
8 _____																		
9 _____																		
10 _____																		
11 _____																		
12 _____																		
<u>47</u> = Total Cover 50% of total cover <u>23.5</u> 20% of total cover: <u>9.4</u>																		
Woody Vine Stratum (Plot Size: <u>30' radius</u>)																		
1 <u>Smilax rotundifolia</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>															
2 _____																		
3 _____																		
4 _____																		
5 _____																		
<u>5</u> = Total Cover 50% of total cover <u>2.5</u> 20% of total cover: <u>1</u>																		
Hydrophytic vegetation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																		
Remarks: (If observed, list morphological adaptations below). The flooded or slough portion of the sample point was 20% open water/no vegetation. Most of the herb layer was dormant. The ash were growing in the wetter portions fo the wetland.																		

SOIL

Sampling Point: **04-WTL-26-wet-1**

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 ¹	Loc ²		
0-12	10YR 4 / 1	95	10YR 4 / 6	5			silty clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	(MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators 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: **Strongly reduced.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-26-wet-1

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 5

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-26-wet-1 Slough entering Mattaponi River.



04-WTL-26-wet-1 Wet swale/slough through BH wetland.



04-WTL-26-wet-1 Slough through BH wetland



04-WTL-26-wet-1 Inundation in wetland - notice ridge in background of photograph.



04-WTL-26-wet-1 Iron deposits from groundwater interaction in wetland.



04-WTL-26-wet-1 Green ash swamp at north end of wetland.
Note: Visited with VDEQ and USACE.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 3, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-26-upl-1
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 10%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.049058 Long: -77.376638 Datum: NAD-1983
 Soil Map Unit Name: Bibb-Chastain complex NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Data point taken on west side of WTL-03. Soils are well drained on a higher stream terrace. Although the soils and vegetation meets the wetland criteria, the hydrology is lacking. Field Sheet 11-A-WTL-03 upDP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations:	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	

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

Remarks: **Saturation was not present despite previous days of rain. Soil is well drained. The area may receive infrequent overflow flooding from the Mattaponi River.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-26-upl-1**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Liquidambar styraciflua</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</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>80.00%</u> (A)
2 <u>Pinus taeda</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>	
3 <u>Fagus grandifolia</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
90 = Total Cover 50% of total cover <u>45</u> 20% of total cover: <u>18</u>				Prevalence Index worksheet 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>150</u> x 3 = <u>450</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>160</u> (A) <u>490</u> (B) Prevalence Index = B/A = <u>3.06</u>
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Ilex opaca</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>	
2 <u>Carpinus caroliniana</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
70 = Total Cover 50% of total cover <u>35</u> 20% of total cover: <u>14</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				
2 _____				
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
9 _____				
10 _____				
11 _____				
12 _____				
0 = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Smilax spp.</u>	<u>5</u>	<u>Y</u>		
2 _____				
3 _____				
4 _____				
5 _____				
5 = Total Cover 50% of total cover <u>2.5</u> 20% of total cover: <u>1</u>				

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 ___ 3 - Prevalence Index is ≤3.0
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes ___ No X

Remarks: (If observed, list morphological adaptations below).
Herb stratum nearly absent. Lots of turkey scratchings and sign.

SOIL

Sampling Point: **04-WTL-26-upl-1**

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 ¹	Loc2		
0-3	10YR 2 / 2	100					loam	organics
3-12+	10YR 4 / 2	80	10YR 5 / 1	20			clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

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

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric soil present? Yes X No _____

Remarks: **Soil is well drained on the high stream terrace.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 3, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-17-wet-2
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): Mattaponi floodplain Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.05279 Long: -77.37634 Datum: NAD-1983
 Soil Map Unit Name: Bibb-Chastain complex, 0 to 2 percent slopes, frequently flooded NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is the northern data point in the large wetland 3 in the Mattaponi River floodplain. This point is near the green ash swamp. Note: This portion of the wetland was reviewed by VDEQ and USACE in December 2016. Field Sheet 11-A-WTL-03 wetDP2.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>up to 12</u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **This was in a swamp near the northern end of the wetland 3. It likely remains flooded for most of the year. Strong sulfidic odor.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-17-wet-2**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Quercus phellos</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: 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 <u>Fraxinus pennsylvanica</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	
3 <u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
50% of total cover <u>25</u> 20% of total cover: <u>10</u>				Prevalence Index worksheet Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>100</u> x 2 = <u>200</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>110</u> (A) <u>230</u> (B) Prevalence Index = B/A = <u>2.09</u>
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Clethra alnifolia</u>	<u>60</u>	<u>Y</u>	<u>FACW</u>	
2 <u>Cornus spp.</u>	<u>5</u>	<u>N</u>		
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
50% of total cover <u>32.5</u> 20% of total cover: <u>13</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				
2 _____				
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
9 _____				
10 _____				
11 _____				
12 _____				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				
2 _____				
3 _____				
4 _____				
5 _____				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).
Ash trees grew in the wetter areas of the swamp. Herb layer absent.

SOIL

Sampling Point: **04-WTL-17-wet-2**

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 ¹	Loc ²		
0-2	10YR 3 / 1	100					silty clay loam	lots of organic matter
2-12	2.5Y 4 / 1	100					silty clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input checked="" type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **Soil core was very mucky with a lot of organic matter.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 3, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-17-upl-2
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 10%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.052903 Long: -77.376218 Datum: NAD-1983
 Soil Map Unit Name: Bibb-Chastain complex NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: This is the upland point in a terrace above (north) Wetland 3. Field Sheet 11-A-WTL-03 upDP2.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
--	---

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

Remarks: **Terrace is well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-17-upl-2**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status																													
1 <u>Juniperus virginiana</u>	<u>60</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: 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)																												
2 <u>Quercus phellos</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>																													
3 <u>Quercus alba</u>	<u>10</u>	<u>N</u>	<u>FACU</u>																													
4 _____																																
5 _____																																
6 _____																																
7 _____																																
8 _____																																
<u>90</u> = Total Cover 50% of total cover <u>45</u> 20% of total cover: <u>18</u>				Prevalence Index worksheet <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;"></td> <td style="text-align:center;">Total % Cover of:</td> <td style="width:50%;"></td> <td style="text-align:center;">Multiply by:</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>20</u></td> <td>x 2 =</td> <td style="text-align:center;"><u>40</u></td> </tr> <tr> <td>FAC species</td> <td style="text-align:center;"><u>0</u></td> <td>x 3 =</td> <td style="text-align:center;"><u>0</u></td> </tr> <tr> <td>FACU species</td> <td style="text-align:center;"><u>70</u></td> <td>x 4 =</td> <td style="text-align:center;"><u>280</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>90</u></td> <td>(A)</td> <td style="text-align:center;"><u>320</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.56</u>		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>70</u>	x 4 =	<u>280</u>	UPL species	<u>0</u>	x 5 =	<u>0</u>	Column totals	<u>90</u>	(A)	<u>320</u> (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>70</u>	x 4 =	<u>280</u>																													
UPL species	<u>0</u>	x 5 =	<u>0</u>																													
Column totals	<u>90</u>	(A)	<u>320</u> (B)																													
<u>10</u> = Total Cover 50% of total cover <u>5</u> 20% of total cover: <u>2</u>																																
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)																																
1 <u>Cornus spp.</u>	<u>10</u>	<u>Y</u>																														
2 _____																																
3 _____																																
4 _____																																
5 _____																																
6 _____																																
7 _____																																
8 _____																																
<u>10</u> = Total Cover 50% of total cover <u>5</u> 20% of total cover: <u>2</u>																																
Herb Stratum (Plot Size: <u>5' radius</u>)																																
1 <u>none</u>																																
2 _____																																
3 _____																																
4 _____																																
5 _____																																
6 _____																																
7 _____																																
8 _____																																
9 _____																																
10 _____																																
11 _____																																
12 _____																																
<u>0</u> = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>																																
Woody Vine Stratum (Plot Size: <u>30' radius</u>)																																
1 <u>Smilax spp.</u>	<u>5</u>	<u>Y</u>																														
2 _____																																
3 _____																																
4 _____																																
5 _____																																
<u>5</u> = Total Cover 50% of total cover <u>2.5</u> 20% of total cover: <u>1</u>																																

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across all Strata: 4 (B)
 Percent of Dominant Species that are OBL, FACW, or FAC: 25.00% (A)

Prevalence Index worksheet

	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>70</u>	x 4 =	<u>280</u>
UPL species	<u>0</u>	x 5 =	<u>0</u>
Column totals	<u>90</u>	(A)	<u>320</u> (B)

Prevalence Index = B/A = 3.56

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation
2 - Dominance Test is >50%
3 - Prevalence Index is ≤3.0
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No X

Remarks: (If observed, list morphological adaptations below).
Herb stratum nearly absent near cedars.

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 ¹	Loc ²		
0-6	10YR 5 / 4	100					loam	
6-12	10YR 6 / 2	95	10YR 4 / 1	5			silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 **X** _____

Remarks: **Soils were not very wet even though delineation followed a 3-day rain event, indicating they are well drained.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline Sampling Date: July 21, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-27-wet
 Investigator(s): L. Eggering Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.039343 Long: -77.376654 Datum: NAD-1983
 Soil Map Unit Name: Altavista fine sandy loam, 0 to 2 percent slopes, very rarely flooded NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is a wetland swale that is inundated or saturated for a long duration during the growing season. The wetland point is in a PFO habitat (04-WTL-29) but it extends east into the Ames pasture. A smaller portion of the wetland is disconnected, north at Holly Hills Road (04-WTL-27). The same datasheet was used for both 04-WTL-27 and 04-WTL-29.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u>X</u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u>X</u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u>X</u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u>X</u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u>X</u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u>X</u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>Surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	--

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

Remarks: **The area ponds water in the lowest portion of the swale, but it was saturated at the time of the survey.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-27-wet**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Fraxinus pennsylvanica	80	Y	FACW
2 Acer rubrum	20	N	FAC
3 Betula nigra	5	N	FACW
4			
5			
6			
7			
8			

105 = Total Cover
 50% of total cover: **52.5** 20% of total cover: **21**

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Fraxinus pennsylvanica	10	Y	FACW
2 Cephalanthus occidentalis	2	N	OBL
3			
4			
5			
6			
7			
8			

12 = Total Cover
 50% of total cover: **6** 20% of total cover: **2.4**

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Saururus cernuus	90	Y	OBL
2 Carex frankii	8	N	OBL
3 Boehmeria cylindrica	5	N	FACW
4			
5			
6			
7			
8			
9			
10			
11			
12			

103 = Total Cover
 50% of total cover: **51.5** 20% of total cover: **20.6**

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: _____ (B)

Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column totals _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).
Previously inundated portions of the wetland had no herbaceous vegetation.

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 ¹	Loc2		
0-3	10YR 3.0 / 1	100					Loam	Lot of organic matter
3-12	10YR 6 / 1	90	10YR 5 / 4	10			Sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **Slight sulfidic odor present.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-27-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	3	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	3	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	3	

Total Score 13

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-27-wet Wetland north of Holly Hill Rd.



04-WTL-27-wet Wetland vegetation.



04-WTL-27-wet Wetland extending into pasture.



04-WTL-27-wet Watermark on fence line.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline Sampling Date: July 21, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-27-upl
 Investigator(s): L. Eggering Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Ballast Local relief (concave, convex, none): _____ Slope (%): 10%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.039342 Long: -77.376684 Datum: NAD-1983
 Soil Map Unit Name: Altavista fine sandy loam, 0 to 2 percent slopes, very rarely flooded NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No _____ (If no, explain in Remarks.)
 Are vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "normal circumstances" present? Yes X No _____
 Are vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (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 <u>X</u> No _____ Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: The upland point near the wetland was on the base of the CSX ballast. It is well-drained and has upland plants. The same datasheet was used for both 04-WTL-27 and 04-WTL-29.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input 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"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<input type="checkbox"/> Marl Deposits (B15) (LRR U)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes _____ No <u>X</u> Depth (inches): _____ Water table present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
--	--

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

Remarks: **The area is very well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-27-upl**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Pinus taeda	10	Y	FAC
2			
3			
4			
5			
6			
7			
8			

10 = Total Cover
 50% of total cover: 5 20% of total cover: 2

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Setaria faberi	80	Y	UPL
2 Dichanthelium sphaerocarpon	20	N	FACU
3 Phytolacca americana	15	N	FACU
4			
5			
6			
7			
8			
9			
10			
11			
12			

115 = Total Cover
 50% of total cover: 57.5 20% of total cover: 23

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	5	Y	
2			
3			
4			
5			

5 = Total Cover
 50% of total cover: 2.5 20% of total cover: 1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 33.33% (A/B)

Prevalence Index worksheet

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>35</u>	x 4 = <u>140</u>
UPL species <u>80</u>	x 5 = <u>400</u>
Column totals <u>125</u> (A)	<u>570</u> (B)

Prevalence Index = B/A = 4.56

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No X

Remarks: (If observed, list morphological adaptations below).
Dense stand of foxtail.

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 ¹	Loc2		
0-12								Rock and coal ash

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

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

Restrictive Layer (if observed):
 Type: Rock and coal ash
 Depth (inches): 0+

Hydric soil present? Yes No

Remarks: **The toe of ballast was 100% rock and coal ash. Could not penetrate with auger.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 3, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-28-wet
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): Mattaponi floodplain Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.039655 Long: -77.376911 Datum: NAD-1983
 Soil Map Unit Name: Altavista fine sandy loam NWI classification: PFO/PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This wetland on the Ames property is primarily a wet meadow in the Ames pasture. No access was allowed; however, good visual evidence could be seen from CSX ROW. Near the ballast there are BH trees as part of this wetland. Field Sheet 11-A-WTL-02-Ames wetDP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u>X</u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u>X</u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>4 inches</u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	--

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

Remarks: **Access was not allowed, however ponding and saturation were visible in a depressional area of the pasture. A change in vegetation was also visible.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-28-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Acer rubrum</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	Dominance Test worksheet: 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 <u>Fraxinus pennsylvanica</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	
3 <u>Betula nigra</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
50% of total cover <u>25</u> 20% of total cover: <u>10</u>				Prevalence Index worksheet Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>30</u> x 2 = <u>60</u> FAC species <u>22</u> x 3 = <u>66</u> FACU species <u>2</u> x 4 = <u>8</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>54</u> (A) <u>134</u> (B) Prevalence Index = B/A = <u>2.48</u>
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				
1 <u>none</u>				
2 _____				
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)				
1 <u>Carex spp.</u>	<u>80</u>	<u>Y</u>		Hydrophytic Vegetation Indicators: <u> </u> 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 <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)
2 _____				
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
9 _____				
10 _____				
11 _____				
12 _____				
50% of total cover <u>40</u> 20% of total cover: <u>16</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)				
1 <u>Lonicera japonica</u>	<u>2</u>		<u>FACU</u>	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 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 vines - All woody vines greater than 3.28 ft in height.
2 <u>Smilax rotundifolia</u>	<u>2</u>		<u>FAC</u>	
3 _____				
4 _____				
5 _____				
50% of total cover <u>2</u> 20% of total cover: <u>0.8</u>				
Hydrophytic vegetation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks: (If observed, list morphological adaptations below).

This is a depressional wet meadow/pasture on the Ames property with some BH trees near the ballast. Area is heavily grazed.

SOIL

Sampling Point: **04-WTL-28-wet**

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 ¹	Loc ²		
0-3	10YR 3 / 1	100					sandy loam	
3-12+	10YR 6 / 2	85	10YR 4 / 1	15			silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **Soils at the base of ballast near CSX ROW are consistent with other soils in the project vicinity.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-28-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 4

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-28-wet View of wetland from CSX ballast.



04-WTL-28-wet View of wetland from CSX ROW.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 3, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-28-upl
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): Mattaponi floodplain Local relief (concave, convex, none): none Slope (%): 35%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.039729 Long: -77.376905 Datum: NAD-1983
 Soil Map Unit Name: Altavista fine sandy loam NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil X, or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Upland point is at base of ballast. Soil is well drained. Soil is coal-like and gritty due to railroad activities. Field Sheet 11-A-WTL-02-Ames upDP1.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Soil is well drained, no saturation.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-28-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				
2				
3				
4				
5				
6				
7				
8				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				
1 <u>none</u>				
2				
3				
4				
5				
6				
7				
8				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)				
1 <u>Setaria faberi</u>	<u>30</u>	<u>Y</u>	<u>UPL</u>	
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
50% of total cover <u>15</u> 20% of total cover: <u>6</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)				
1 <u>Lonicera japonica</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
2				
3				
4				
5				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A)

Prevalence Index worksheet

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>10</u>	x 4 = <u>40</u>
UPL species <u>30</u>	x 5 = <u>150</u>
Column totals <u>40</u> (A)	<u>190</u> (B)

Prevalence Index = B/A = 4.75

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No X

Remarks: (If observed, list morphological adaptations below).

Foxtail is growing on ballast.

SOIL

Sampling Point: **04-WTL-28-upl**

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 ¹	Loc2		
0-12+	10YR 3 / 1	100					sand	coal-like and gritty

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks: **Soil is influenced by railroad. Coal-like soil.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline Sampling Date: July 21, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-29-wet
 Investigator(s): L. Eggering Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.039343 Long: -77.376654 Datum: NAD-1983
 Soil Map Unit Name: Altavista fine sandy loam, 0 to 2 percent slopes, very rarely flooded NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: **This is a wetland swale that is inundated or saturated for a long duration during the growing season. The wetland point is in a PFO habitat but it extends east into the Ames pasture. A smaller portion of the wetland is disconnected (north at Holly Hills Road).**
 Field Data Sheet 11-A-WTL-01a-wet

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	<u> </u> Surface Soil Cracks (B6)
<u> </u> Surface Water (A1)	<u>X</u> Sparsely Vegetated Concave Surface (B8)
<u> </u> High Water Table (A2)	<u>X</u> Drainage Patterns (B10)
<u>X</u> Saturation (A3)	<u>X</u> Moss Trim Lines (B16)
<u> </u> Water Marks (B1)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Sediment Deposits (B2)	<u>X</u> Crayfish Burrows (C8)
<u> </u> Drift Deposits (B3)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Geomorphic Position (D2)
<u> </u> Iron Deposits (B5)	<u> </u> Shallow Aquitard (D3)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> FAC-Neutral Test (D5)
<u>X</u> Water-Stained Leaves (B9)	<u> </u> Sphagnum moss (D8) (LRR T, U)

Field Observations:	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>Surface</u>	

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

Remarks: **The area ponds water in the lowest portion of the swale, but it was saturated at the time of the survey.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-29-wet**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Fraxinus pennsylvanica	80	Y	FACW
2 Acer rubrum	20	N	FAC
3 Betula nigra	5	N	FACW
4			
5			
6			
7			
8			

105 = Total Cover
 50% of total cover: **52.5** 20% of total cover: **21**

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Fraxinus pennsylvanica	10	Y	FACW
2 Cephalanthus occidentalis	2	N	OBL
3			
4			
5			
6			
7			
8			

12 = Total Cover
 50% of total cover: **6** 20% of total cover: **2.4**

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Saururus cernuus	90	Y	OBL
2 Carex frankii	8	N	OBL
3 Boehmeria cylindrica	5	N	FACW
4			
5			
6			
7			
8			
9			
10			
11			
12			

103 = Total Cover
 50% of total cover: **51.5** 20% of total cover: **20.6**

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)
 Total Number of Dominant Species Across all Strata: _____ (B)
 Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet
 Total % Cover of: _____ Multiply by: _____
 OBL species _____ x 1 = _____
 FACW species _____ x 2 = _____
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column totals _____ (A) _____ (B)
 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
X 1 -Rapid Test for Hydrophytic Vegetation
 _____ 2 - Dominance Test is >50%
 _____ 3 - Prevalence Index is ≤3.0¹
 _____ Problematic Hydrophytic Vegetation¹ (Explain)

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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes **X** No _____

Remarks: (If observed, list morphological adaptations below).
Previously inundated portions of the wetland had no herbaceous vegetation.

SOIL

Sampling Point: 04-WTL-29-wet

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 ¹	Loc2		
0-3	10YR 3 / 1	100					Loam	Lot of organic matter
3-12	10YR 6 / 1	90	10YR 5 / 4	10			Sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	(MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators 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: **Slight sulfidic odor present.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-29-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	3	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	3	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	3	

Total Score 13

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-29-wet Wetland north of Holly Hill Road.



04-WTL-29-wet Non-vegetated areas from inundation.



04-WTL-29-wet Wetland extending into pasture.



04-WTL-29-wet Watermark on fenceline.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline Sampling Date: July 21, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-29-upl
 Investigator(s): L. Eggering Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Ballast Local relief (concave, convex, none): none Slope (%): 10%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.039342 Long: -77.376684 Datum: NAD-1983
 Soil Map Unit Name: Altavista fine sandy loam, 0 to 2 percent slopes, very rarely flooded NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland?	Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>		
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>		

Remarks: **The upland point near the wetland was on the base of the CSX ballast. It is well-drained and has upland plants.**
Field Data Sheet 11-WTL-01-upl

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<u> </u> Surface Water (A1)	<u> </u> Aquatic Fauna (B13)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Marl Deposits (B15) (LRR U)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Hydrogen Sulfide Odor (C1)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Presence of Reduced Iron (C4)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Thin Muck Surface (C7)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Other (Explain in Remarks)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)		<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)		<u> </u> FAC-Neutral Test (D5)
		<u> </u> Sphagnum moss (D8) (LRR T, U)

Field Observations:		Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Surface water present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Water table present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe)	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	

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

Remarks: **The area is very well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-29-upl**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Pinus taeda	10	Y	FAC
2			
3			
4			
5			
6			
7			
8			

10 = Total Cover
 50% of total cover: 5 20% of total cover: 2

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Setaria faberi	80	Y	UPL
2 Dichanthelium sphaerocarpon	20	N	FACU
3 Phytolacca americana	15	N	FACU
4			
5			
6			
7			
8			
9			
10			
11			
12			

115 = Total Cover
 50% of total cover: 57.5 20% of total cover: 23

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	5	Y	
2			
3			
4			
5			

5 = Total Cover
 50% of total cover: 2.5 20% of total cover: 1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 33.33% (A/B)

Prevalence Index worksheet

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>35</u>	x 4 = <u>140</u>
UPL species <u>80</u>	x 5 = <u>400</u>
Column totals <u>125</u> (A)	<u>570</u> (B)

Prevalence Index = B/A = 4.56

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No **X**

Remarks: (If observed, list morphological adaptations below).
Dense stand of foxtail.

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 ¹	Loc2		
0-12								Rock and coal ash

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

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

Restrictive Layer (if observed):
 Type: Rock and coal ash
 Depth (inches): 0+

Hydric soil present? Yes No

Remarks: **The toe of ballast was 100% rock and coal ash. Could not penetrate with auger.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline Sampling Date: July 21, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-30-wet
 Investigator(s): L. Eggering Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 6%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.036474 Long: -77.376262 Datum: NAD-1983
 Soil Map Unit Name: Tomotley-Roanoke complex, 0 to 2 percent slopes, rarely flooded NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: **This is a narrow bottomland hardwood wetland parallel to the CSX ROW. A portion extends into the adjacent pasture to the east.**
Field Data Sheet 11-A-WTL-2a-wet

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	<u> </u> Surface Soil Cracks (B6)
<u> </u> Surface Water (A1)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> High Water Table (A2)	<u>X</u> Drainage Patterns (B10)
<u>X</u> Saturation (A3)	<u> </u> Moss Trim Lines (B16)
<u> </u> Water Marks (B1)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Sediment Deposits (B2)	<u>X</u> Crayfish Burrows (C8)
<u> </u> Drift Deposits (B3)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Geomorphic Position (D2)
<u> </u> Iron Deposits (B5)	<u> </u> Shallow Aquitard (D3)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> FAC-Neutral Test (D5)
<u>X</u> Water-Stained Leaves (B9)	<u> </u> Sphagnum moss (D8) (LRR T, U)

Field Observations:	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>8 inches</u> (includes capillary fringe)	

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

Remarks: **The linear portion of the wetland is variable in its elevation with slight undulations.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-30-wet**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Acer rubrum</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>
2 <u>Quercus phellos</u>	<u>40</u>	<u>Y</u>	<u>FACW</u>
3 _____	_____	_____	_____
4 _____	_____	_____	_____
5 _____	_____	_____	_____
6 _____	_____	_____	_____
7 _____	_____	_____	_____
8 _____	_____	_____	_____

_____ = Total Cover
 50% of total cover: 40 20% of total cover: 16

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2 _____	_____	_____	_____
3 _____	_____	_____	_____
4 _____	_____	_____	_____
5 _____	_____	_____	_____
6 _____	_____	_____	_____
7 _____	_____	_____	_____
8 _____	_____	_____	_____

_____ = Total Cover
 50% of total cover: 5 20% of total cover: 2

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Chasmanthium laxum</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>
2 _____	_____	_____	_____
3 _____	_____	_____	_____
4 _____	_____	_____	_____
5 _____	_____	_____	_____
6 _____	_____	_____	_____
7 _____	_____	_____	_____
8 _____	_____	_____	_____
9 _____	_____	_____	_____
10 _____	_____	_____	_____
11 _____	_____	_____	_____
12 _____	_____	_____	_____

_____ = Total Cover
 50% of total cover: 2.5 20% of total cover: 1

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Smilax glauca</u>	<u>2</u>	_____	<u>FAC</u>
2 _____	_____	_____	_____
3 _____	_____	_____	_____
4 _____	_____	_____	_____
5 _____	_____	_____	_____

_____ = Total Cover
 50% of total cover: 1 20% of total cover: 0.4

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index worksheet

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>52</u>	x 3 = <u>156</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>97</u> (A)	<u>246</u> (B)

Prevalence Index = B/A = 2.54

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).
Herbaceous layer was mainly absent due to past inundation and canopy shading.

SOIL

Sampling Point: 04-WTL-30-wet

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 ¹	Loc2		
0-2	10YR	4 / 1	100					Loam	
2-12	10YR	7 / 2	95	10YR	5 / 6	5		Sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	(MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators 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: **The soil core was saturated at 8 inches.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-30-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	3	

Total Score 11

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-30-wet Wetland vegetation.



04-WTL-30-wet Evidence of inundation within wetland.



04-WTL-30-wet Water stained leaves in wetland.



04-WTL-30-wet Raised area in wetland.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline Sampling Date: July 21, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-30-upl
 Investigator(s): L. Eggering Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Ballast Local relief (concave, convex, none): Convex Slope (%): 45%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.063376 Long: -77.376339 Datum: NAD-1983
 Soil Map Unit Name: Tomotely-Roanoke complex, 0 to 2 percent slopes, rarely flooded NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	

Remarks: **The upland point near the wetland was on the base of the CSX ballast. It is well-drained and has upland plants.**
Field Data Sheet 11-WTL-02a-upl or 21-WTL-02a-upl
Note: used Segment 21 data dictionary

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	<u> </u> Surface Soil Cracks (B6)
<u> </u> Surface Water (A1)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> High Water Table (A2)	<u> </u> Drainage Patterns (B10)
<u> </u> Saturation (A3)	<u> </u> Moss Trim Lines (B16)
<u> </u> Water Marks (B1)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Sediment Deposits (B2)	<u> </u> Crayfish Burrows (C8)
<u> </u> Drift Deposits (B3)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Geomorphic Position (D2)
<u> </u> Iron Deposits (B5)	<u> </u> Shallow Aquitard (D3)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Water-Stained Leaves (B9)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Aquatic Fauna (B13)	
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
--	---

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

Remarks: **The area is moderately well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-30-upl**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Setaria faberi	30	Y	UPL
2 Sorghum halepense	10	Y	FACU
3 Sericea lespedeza	10	N	FACU
4			
5			
6			
7			
8			
9			
10			
11			
12			

50 = Total Cover
 50% of total cover: 25 20% of total cover: 10

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	5	Y	
2			
3			
4			
5			

5 = Total Cover
 50% of total cover: 2.5 20% of total cover: 1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index worksheet

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>20</u>	x 4 = <u>80</u>
UPL species <u>30</u>	x 5 = <u>150</u>
Column totals <u>50</u> (A)	<u>230</u> (B)

Prevalence Index = B/A = 4.60

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No **X**

Remarks: (If observed, list morphological adaptations below).
40% of the sample plot does not have vegetation.

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 ¹	Loc2		
0-3	10YR	3.0 / 1	100					Coal ash
3+								Rock

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

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

Restrictive Layer (if observed):
 Type: Rock
 Depth (inches): 3+

Hydric soil present? Yes No

Remarks: **Auger could only penetrate approximately 3 inches before rock refusal.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 3, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-31-wet
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): Mattaponi floodplain Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.035933 Long: -77.376454 Datum: NAD-1983
 Soil Map Unit Name: Tomotley-Roanoke complex NWI classification: PEM
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Delineation completed after a recent rain event. This wet marsh/BH wetland is adjacent to Stream 1. It includes the fringe area of the stream. No access is allowed on this property, however the wetland extends to CSX ROW, near ballast. Field Sheet 11-A-WTL-01-Ames.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u>X</u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u>X</u> Drainage Patterns (B10)
<u>X</u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u>X</u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u>X</u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u>X</u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>12 inches</u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	--

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

Remarks: **Appears to be a poorly drained area that ponds water or remains saturated for long durations during the growing season.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-31-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 none				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across all Strata: _____ (B) Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)
2				
3				
4				
5				
6				
7				
8				
_____ = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>				Prevalence Index worksheet Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column totals _____ (A) _____ (B) Prevalence Index = B/A = _____ Hydrophytic Vegetation Indicators: <input checked="" 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 <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 Cephalanthus occidentalis	10	Y		
2				
3				
4				
5				
6				
7				
8				
_____ = Total Cover 50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 Juncus effusus	30	Y	OBL	
2 Hibiscus spp.	20	Y		
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
_____ = Total Cover 50% of total cover <u>25</u> 20% of total cover: <u>10</u>				¹ 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 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 vines - All woody vines greater than 3.28 ft in height.
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 none				
2				
3				
4				
5				
_____ = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>				

Remarks: (If observed, list morphological adaptations below).
Willow oak and loblolly pine are on the north margin of the wetland.

SOIL

Sampling Point: **04-WTL-31-wet**

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 ¹	Loc ²		
0-12	10YR 6 / 2	90	10YR 4 / 1	10			silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **Soils were consistend with soils in nearby wetlands.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-31-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 9

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-31-wet View of wetland from CSX ballast.



04-WTL-31-wet Fence divides CSX ROW from private property.



04-WTL-31-wet View of wetland from CSX ballast.



04-WTL-31-wet Ballast and inundation in northern portion of wetland.



04-WTL-31-wet Northern end of wetland.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 3, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-31-upl
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): Mattaponi floodplain Local relief (concave, convex, none): none Slope (%): 5%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.035928 Long: -77.376712 Datum: NAD-1983
 Soil Map Unit Name: Tarboro-Bojac complex NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydic Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	
Remarks: Fescue pasture on south side of STR-01. Appeared to be well drained. Assessed upland point from railroad ballast, due to landowner refusal of access. Pasture was in good condition (no barren land). Field Sheet 11-A-WTL-01 upDP1.			

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations:	
Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	

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

Remarks: **Area appeared to be well drained. No puddles present, even after recent rain events.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-31-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1 <u>none</u>				Dominance Test worksheet: 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)
2				
3				
4				
5				
6				
7				
8				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				Prevalence Index worksheet 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>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____ Hydrophytic Vegetation Indicators: ___ 1 -Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ___ Problematic Hydrophytic Vegetation ¹ (Explain)
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				
2				
3				
4				
5				
6				
7				
8				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Fescue</u>	<u>100</u>	<u>Y</u>		
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
50% of total cover <u>50</u> 20% of total cover: <u>20</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				
2				
3				
4				
5				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes _____ No X

Remarks: (If observed, list morphological adaptations below).
Detailed vegetation survey was not possible due to landowner denying access. Area assessed from railroad ballast. Pasture was in good condition.

SOIL

Sampling Point: **04-WTL-31-upl**

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 ¹	Loc2		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	(MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric soil present? Yes _____ No X

Remarks: **Soils presumed to be consistent with other upland data points take throughout the Mattaponi River floodplain. Soils could not be assessed due to no access.**

SOIL

Sampling Point: **04-WTL-32-wet**

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 ¹	Loc ²		
0-3	10YR 3 / 1	100					loam	organics
3-12+	10YR 4 / 1	97	10YR 5 / 8	3			silty clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-32-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 6

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-32-wet View of upland area.



04-WTL-32-wet View of woolgrass portion of wetland.



04-WTL-32-wet View of asphalt road crossing wetland.
Note: This area is included in the wetland boundary at the request of the USACE.



04-WTL-32-wet View of inundation in wetland.



04-WTL-32-wet View of wetland from potential culvert under railroad.



04-WTL-32-wet View of potential culvert draining wetland under railroad.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 3, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-32-upl
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 20%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.030155 Long: -77.375668 Datum: NAD-1983
 Soil Map Unit Name: Bibb-Chastain complex NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Upland point taken on a high spot adjacent to WTL-4. Between WTL-04 and ballast. Soils are well drained. Field Sheet 11-A-WTL-04 upDP1.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
---	---

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

Remarks: **No saturation present. Soils are well drained. Data point on high area adjacent to wetland.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-32-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	Pinus taeda	30	Y	FAC
2	Juniperus virginiana	20	Y	FACU
3				
4				
5				
6				
7				
8				

50 = Total Cover
50% of total cover 25 20% of total cover: 10

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	Betula nigra	15	Y	FACW
2	Cornus spp.	15	Y	
3	Pinus taeda	5	N	FAC
4	Juniperus virginiana	5	N	FACU
5				
6				
7				
8				

40 = Total Cover
50% of total cover 20 20% of total cover: 8

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	Leptochloa fusca	20	Y	
2	Cornus spp.	20	Y	
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

40 = Total Cover
50% of total cover 20 20% of total cover: 8

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
50% of total cover 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 33.33% (A)

Prevalence Index worksheet

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>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>75</u> (A)	<u>235</u> (B)

Prevalence Index = B/A = 3.13

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0
 - Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: **04-WTL-32-upl**

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 ¹	Loc ²		
0-9	10YR 4 / 4	60	10YR 4 / 6	40			sandy loam	
9-12+	10YR 3 / 1	100					sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric soil present? Yes _____ No X

Remarks: **Area includes asphalt fill for the access road.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 3, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-33-wet
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.030255 Long: -77.375826 Datum: NAD-1983

Soil Map Unit Name: Altavista fine sandy loam NWI classification: PEM/PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Wetland 4 consists of a cutover BH and scrub-shrub swamp. There are some east to west running ridges that are not wetland. This sample point is near the toe of one of the ridges. The asphalt road was excluded from the wetland. During a subsequent field review with the Corps (Ms. Regena Bronson) and VDEQ, it was requested by the Corps that the asphalt fill road be included in the wetland boundaries. Therefore, the road will not be excluded as was originally mapped using the GPS. Field Sheet 11-A-WTL-04 wetDP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0-8</u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	---

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

Remarks: **Surface water and obligate vegetation are present. Soil is saturated.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-33-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				
2				
3				
4				
5				
6				
7				
8				
0 = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Betula nigra</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	
2 <u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
3				
4				
5				
6				
7				
8				
30 = Total Cover 50% of total cover <u>15</u> 20% of total cover: <u>6</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Scirpus cyperinus</u>	<u>50</u>	<u>Y</u>	<u>OBL</u>	
2 <u>Carex spp.</u>	<u>20</u>	<u>Y</u>		
3 <u>Smilax spp.</u>	<u>5</u>	<u>N</u>		
4 <u>Juncus effusus</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	
5 <u>Clethra alnifolia</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
6 <u>Typha latifolia</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	
7				
8				
9				
10				
11				
12				
90 = Total Cover 50% of total cover <u>45</u> 20% of total cover: <u>18</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				
2				
3				
4				
5				
0 = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 75.00% (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>60</u>	x 1 = <u>60</u>
FACW species <u>25</u>	x 2 = <u>50</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>95</u> (A)	<u>140</u> (B)

Prevalence Index = B/A = 1.47

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).

Much of the herbaceous vegetation had senesced.

SOIL

Sampling Point: **04-WTL-33-wet**

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 ¹	Loc2		
0-3	10YR 3 / 1	100					loam	organics
3-12+	10YR 4 / 1	97	10YR 5 / 8	3			silty clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators 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:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-33-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 6

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-33-wet View of upland area.



04-WTL-33-wet View of woolgrass portion of wetland.



04-WTL-33-wet View of asphalt road crossing wetland.
Note: This area is included in the wetland boundary at the request of the USACE.



04-WTL-33-wet View of inundation in wetland.



04-WTL-33-wet View of wetland from potential culvert under railroad.



04-WTL-33-wet View of potential culvert draining wetland under railroad.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 3, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-33-upl
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 20%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.030155 Long: -77.375668 Datum: NAD-1983
 Soil Map Unit Name: Bibb-Chastain complex NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Upland point taken on a high spot adjacent to WTL-4. Between WTL-04 and ballast. Soils are well drained. Field Sheet 11-A-WTL-04 upDP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **No saturation present. Soils are well drained. Data point on high area adjacent to wetland.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-33-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Pinus taeda</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</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>33.33%</u> (A)
2 <u>Juniperus virginiana</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
50% of total cover <u>25</u>		<u>50</u> = Total Cover		Prevalence Index worksheet 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>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>75</u> (A) <u>235</u> (B)
20% of total cover: <u>10</u>				
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				
1 <u>Betula nigra</u>	<u>15</u>	<u>Y</u>	<u>FACW</u>	
2 <u>Cornus spp.</u>	<u>15</u>	<u>Y</u>		
3 <u>Pinus taeda</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
4 <u>Juniperus virginiana</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
5 _____				
6 _____				
7 _____				
8 _____				
50% of total cover <u>20</u>		<u>40</u> = Total Cover		
20% of total cover: <u>8</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)				
1 <u>Leptochloa fusca</u>	<u>20</u>	<u>Y</u>		
2 <u>Cornus spp.</u>	<u>20</u>	<u>Y</u>		
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
9 _____				
10 _____				
11 _____				
12 _____				
50% of total cover <u>20</u>		<u>40</u> = Total Cover		
20% of total cover: <u>8</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)				
1 <u>none</u>				
2 _____				
3 _____				
4 _____				
5 _____				
50% of total cover <u>0</u>		<u>0</u> = Total Cover		
20% of total cover: <u>0</u>				

Prevalence Index = B/A = 3.13

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0
- Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No X

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: **04-WTL-33-upl**

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 ¹	Loc ²		
0-9	10YR 4 / 4	60	10YR 4 / 6	40			sandy loam	
9-12+	10YR 3 / 1	100					sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks: **Area includes asphalt fill for the access road.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 8, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-34-wet
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.01907056 Long: -77.37436339 Datum: NAD-1983
 Soil Map Unit Name: Altavista fine sandy loam, 0 to 2 percent slopes, very rarely flooded NWI classification: PEM
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Portions are PEM and portions are PFO. Field Sheet 12-BWTL1WET1. Note: No photo for this wetland.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) ___ Aquatic Fauna (B13) ___ High Water Table (A2) ___ Marl Deposits (B15) (LRR U) ___ Saturation (A3) ___ Hydrogen Sulfide Odor (C1) ___ Water Marks (B1) ___ Oxidized Rhizospheres on Living Roots (C3) ___ Sediment Deposits (B2) ___ Presence of Reduced Iron (C4) ___ Drift Deposits (B3) ___ Recent Iron Reduction in Tilled Soils (C6) ___ Algal Mat or Crust (B4) ___ Thin Muck Surface (C7) ___ Iron Deposits (B5) ___ Other (Explain in Remarks) ___ Inundation Visible on Aerial Imagery (B7) ___ Water-Stained Leaves (B9)	___ 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) ___ Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ FAC-Neutral Test (D5) ___ Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>4-6</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Wetland behind control tower near Interlocking "A". Depressional area that appears to be isolated, because no evident connection can be made.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-34-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				
2				
3				
4				
5				
6				
7				
8				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
0 = Total Cover				
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Betula nigra</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>	
2				
3				
4				
5				
6				
7				
8				
50% of total cover <u>2.5</u> 20% of total cover: <u>1</u>				
5 = Total Cover				
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Juncus effusus</u>	<u>30</u>	<u>Y</u>	<u>OBL</u>	
2 <u>Bidens spp.</u>	<u>20</u>	<u>Y</u>		
3 <u>Panicum spp.</u>	<u>15</u>	<u>Y</u>		
4 <u>Xanthium spp.</u>	<u>10</u>	<u>N</u>		
5				
6				
7				
8				
9				
10				
11				
12				
50% of total cover <u>37.5</u> 20% of total cover: <u>15</u>				
75 = Total Cover				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				
2				
3				
4				
5				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
0 = Total Cover				

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: _____ (B)

Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column totals _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No _____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: **04-WTL-34-wet**

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 ¹	Loc2		
0-2	10YR 3 / 1	100					sand	muck
2-12+	10YR 4 / 1	100					sandy clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 8, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-34-upl
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): steep slope Local relief (concave, convex, none): none Slope (%): 10%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.01904884 Long: -77.3744102 Datum: NAD-1983
 Soil Map Unit Name: Altavista fine sandy loam, 0 to 2 percent slopes, very rarely flooded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	
Remarks: Upland adjacent to mowed field. Field Sheet 12-BWTL1UP1.			

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Area is well drained.		

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-34-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status																													
1 <u>none</u>				Dominance Test worksheet: 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)																												
2																																
3																																
4																																
5																																
6																																
7																																
8																																
50% of total cover <u>0</u> = Total Cover 20% of total cover: <u>0</u>				Prevalence Index worksheet <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;"></td> <td style="text-align: center;">Total % Cover of:</td> <td style="width:50%;"></td> <td style="text-align: center;">Multiply by:</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>95</u></td> <td>x 3 =</td> <td style="text-align: center;"><u>285</u></td> </tr> <tr> <td>FACU species</td> <td style="text-align: center;"><u>5</u></td> <td>x 4 =</td> <td style="text-align: center;"><u>20</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>100</u></td> <td>(A)</td> <td style="text-align: center;"><u>305</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.05</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>95</u>	x 3 =	<u>285</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>305</u> (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>95</u>	x 3 =	<u>285</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>305</u> (B)																													
50% of total cover <u>0</u> = Total Cover 20% of total cover: <u>0</u>																																
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)																																
1 <u>none</u>																																
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3																																
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6																																
7																																
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50% of total cover <u>0</u> = Total Cover 20% of total cover: <u>0</u>																																
Herb Stratum (Plot Size: <u>5' radius</u>)																																
1 <u>Festuca arundinaceus</u>	<u>95</u>	<u>Y</u>	<u>FAC</u>																													
2 <u>Schizachyrium scoparium</u>	<u>5</u>	<u>N</u>	<u>FACU</u>																													
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50% of total cover <u>50</u> = Total Cover 20% of total cover: <u>20</u>																																
Woody Vine Stratum (Plot Size: <u>30' radius</u>)																																
1 <u>none</u>																																
2																																
3																																
4																																
5																																
50% of total cover <u>0</u> = Total Cover 20% of total cover: <u>0</u>																																

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across all Strata: 1 (B)
 Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A)

Prevalence Index worksheet
 Total % Cover of: Multiply by:
 OBL species 0 x 1 = 0
 FACW species 0 x 2 = 0
 FAC species 95 x 3 = 285
 FACU species 5 x 4 = 20
 UPL species 0 x 5 = 0
 Column totals 100 (A) 305 (B)
 Prevalence Index = B/A = 3.05

Hydrophytic Vegetation Indicators:
 1 -Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No X

Remarks: (If observed, list morphological adaptations below).
Mowed field off industrial truck repair.

SOIL

Sampling Point: **04-WTL-34-upl**

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 ¹	Loc ²		
0-12	10YR 3 / 3	100					sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks: **Dark sandy loam, mowed grassy field.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 8, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-35-wet
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.01603227 Long: -77.37406955 Datum: NAD-1983
 Soil Map Unit Name: Udorthents loamy, 0 to 15 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> </u>
Remarks: This is a bottomland hardwood wetland in the Mattaponi River floodplain. Field Sheet 12-BWTL2WET1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Hydrology due to floodplain of Mattaponi River.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-35-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>Betula nigra</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)	
2 <u>Platanus occidentalis</u>	<u>5</u>		<u>FACW</u>	Total Number of Dominant Species Across all Strata: <u>4</u> (B)	
3 <u>Carpinus caroliniana</u>	<u>5</u>		<u>FAC</u>	Percent of Dominant Species that are OBL, FACW, or FAC: <u>75.00%</u> (A/B)	
4 _____				Prevalence Index worksheet	
5 _____					
6 _____					
7 _____					
8 _____					
Total % Cover of: <u>30</u> = Total Cover				Total % Cover of: _____ Multiply by: _____	
50% of total cover <u>15</u> 20% of total cover: <u>6</u>				OBL species <u>0</u> x 1 = <u>0</u>	
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				FACW species <u>30</u> x 2 = <u>60</u>	
1 <u>Ilex decida</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>	FAC species <u>20</u> x 3 = <u>60</u>	
2 _____				FACU species <u>0</u> x 4 = <u>0</u>	
3 _____				UPL species <u>0</u> x 5 = <u>0</u>	
4 _____				Column totals <u>50</u> (A) <u>120</u> (B)	
5 _____				Prevalence Index = B/A = <u>2.40</u>	
6 _____				Hydrophytic Vegetation Indicators:	
7 _____				<u> </u> 1 -Rapid Test for Hydrophytic Vegetation	
8 _____				<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
Total % Cover of: <u>5</u> = Total Cover				<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0	
50% of total cover <u>2.5</u> 20% of total cover: <u>1</u>				<u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)	
Herb Stratum (Plot Size: <u>5' radius</u>)				¹ 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 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 vines - All woody vines greater than 3.28 ft in height.	
1 <u>Carex spp.</u>	<u>50</u>	<u>Y</u>			
2 <u>Polygonum pensylvanicum</u>	<u>10</u>	<u>N</u>			
3 _____					
4 _____					
5 _____					
6 _____					
7 _____					
8 _____					
9 _____					
10 _____					
11 _____					
12 _____					
Total % Cover of: <u>60</u> = Total Cover				Hydrophytic vegetation present? Yes <input checked="" type="checkbox"/> No _____	
50% of total cover <u>30</u> 20% of total cover: <u>12</u>					
Woody Vine Stratum (Plot Size: <u>30' radius</u>)					
1 <u>Toxicodendron radicans</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>		
2 _____					
3 _____					
4 _____					
5 _____					
Total % Cover of: <u>15</u> = Total Cover					
50% of total cover <u>7.5</u> 20% of total cover: <u>3</u>					

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: **04-WTL-35-wet**

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 ¹	Loc2		
0-12+	10YR 4 / 1	100					silt loam	faint mottles

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **Mucky**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-35-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 4

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-35-wet

PFO habitat in wetland.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 8, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-35-upl
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): steep slope Local relief (concave, convex, none): none Slope (%): 45%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.01603895 Long: -77.37400619 Datum: NAD-1983

Soil Map Unit Name: Udorthents loamy, 0 to 15 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Steep slope along power line corridor. Hillside drops off into floodplain adjacent Mattaponi River. Field Sheet 12-BWTL2UP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-35-up1**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1 <u>none</u>				Dominance Test worksheet: 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>66.67%</u> (A)														
2																		
3																		
4																		
5																		
6																		
7																		
8																		
0 = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>				Prevalence Index worksheet <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>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>25</u></td> <td>x 3 = <u>75</u></td> </tr> <tr> <td>FACU species <u>5</u></td> <td>x 4 = <u>20</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column totals <u>30</u></td> <td>(A) <u>95</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.17</u> Hydrophytic Vegetation Indicators: <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 <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	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>5</u>	x 4 = <u>20</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column totals <u>30</u>	(A) <u>95</u> (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>5</u>	x 4 = <u>20</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column totals <u>30</u>	(A) <u>95</u> (B)																	
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1 <u>Ilex opaca</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>															
2 <u>Ligustrum japonicum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>															
3																		
4																		
5																		
6																		
7																		
8																		
20 = Total Cover 50% of total cover <u>10</u> 20% of total cover: <u>4</u>																		
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1 <u>Rubus spp.</u>	<u>30</u>	<u>Y</u>																
2 <u>Verbascum thapsus</u>	<u>5</u>	<u>N</u>	<u>FACU</u>															
3 <u>Microstegium vimineum</u>	<u>5</u>	<u>N</u>	<u>FAC</u>															
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		
40 = Total Cover 50% of total cover <u>20</u> 20% of total cover: <u>8</u>																		
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1 <u>none</u>																		
2																		
3																		
4																		
5																		
0 = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>																		

Remarks: (If observed, list morphological adaptations below).
Steep slope.

Hydrophytic vegetation present? Yes X No _____

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 8, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-36-wet
 Investigator(s): D. Mitchell, R, Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): slough Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.01259493 Long: -77.37363898 Datum: NAD-1983
 Soil Map Unit Name: Bibb-Chastain complex, 0 to 2 percent slopes, frequently flooded NWI classification: PEM/PFO
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is a backwater slough of the Mattaponi River between 2 rowcrop fields. Field Sheet 12-BWTL3WET1.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>>6 inches</u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Backwater slough of Mattaponi between 2 rowcrop fields. Likely beaver induced; algae layer on surface.	

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-36-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Nyssa sylvatica</u>	<u>5</u>		FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across all Strata: _____ (B) Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)
2 <u>Platanus occidentalis</u>	<u>5</u>		FACW	
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				Prevalence Index worksheet Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column totals _____ (A) _____ (B) Prevalence Index = B/A = _____ Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 -Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is >50% _____ 3 - Prevalence Index is ≤3.0 _____ Problematic Hydrophytic Vegetation ¹ (Explain)
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				
1 <u>none</u>				
2 _____				
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)				
1 <u>Lemna spp.</u>	<u>20</u>	Y		¹ 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 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 vines - All woody vines greater than 3.28 ft in height.
2 <u>Eichhornia crassipes</u>	<u>10</u>	Y	OBL	
3 <u>Onoclea sensibilis</u>	<u>5</u>	N	FACW	
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
9 _____				
10 _____				
11 _____				
12 _____				
50% of total cover <u>17.5</u> 20% of total cover: <u>7</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)				
1 <u>none</u>				Hydrophytic vegetation present? Yes <u>X</u> No _____
2 _____				
3 _____				
4 _____				
5 _____				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: **04-WTL-36-wet**

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 ¹	Loc2		
0-12+	10YR 3 / 1	100					silt loam	mucky

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

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

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric soil present? Yes X No _____

Remarks: **Mucky**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-36-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	2	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 8

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-36-wet

Mattaponi slough wetland.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 8, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-36-upl
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 5%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.01261949 Long: -77.37367411 Datum: NAD-1983
 Soil Map Unit Name: Bibb-Chastain complex, 0 to 2 percent slopes, frequently flooded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Upland along edge of backwater slough at edge of row crop field. Field Sheet 12-BWTL3UP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-36-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
1 <u>Platanus occidentalis</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across all Strata: _____ (B) Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A)	
2 <u>Prunus serotina</u>	<u>5</u>	<u>Y</u>			
3 <u>Nyssa sylvatica</u>	<u>1</u>	<u>N</u>	<u>FAC</u>		
4 _____					
5 _____					
6 _____					
7 _____					
8 _____					
<u>11</u> = Total Cover 50% of total cover <u>5.5</u> 20% of total cover: <u>2.2</u>				Prevalence Index worksheet Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column totals _____ (A) _____ (B) Prevalence Index = B/A = _____ Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 -Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is >50% _____ 3 - Prevalence Index is ≤3.0 _____ Problematic Hydrophytic Vegetation ¹ (Explain)	
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
1 <u>none</u>					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 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 vines - All woody vines greater than 3.28 ft in height.
2 _____					
3 _____					
4 _____					
5 _____					
6 _____					
7 _____					
8 _____					
<u>0</u> = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>				Hydrophytic vegetation present? Yes <input checked="" type="checkbox"/> No _____	
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
1 <u>Smilax spp.</u>	<u>60</u>	<u>Y</u>			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2 <u>Lonicera spp.</u>	<u>20</u>	<u>Y</u>			
3 _____					
4 _____					
5 _____					
6 _____					
7 _____					
8 _____					
9 _____					
10 _____					
11 _____					
12 _____					
<u>80</u> = Total Cover 50% of total cover <u>40</u> 20% of total cover: <u>16</u>					
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
1 <u>Campsis radicans</u>	<u>1</u>	<u>N</u>	<u>FAC</u>	Hydrophytic vegetation present? Yes <input checked="" type="checkbox"/> No _____	
2 _____					
3 _____					
4 _____					
5 _____					
<u>1</u> = Total Cover 50% of total cover <u>0.5</u> 20% of total cover: <u>0.2</u>					

Remarks: (If observed, list morphological adaptations below).

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 ¹	Loc2		
0-1	10YR 2 / 2	100					sandy clay loam	high organics
1-12+	10YR 4 / 3	100					sandy clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 8, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-37-wet
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.0107401 Long: -77.37304184 Datum: NAD-1983
 Soil Map Unit Name: Bojac sandy loam, 0 to 6 percent slopes, very rarely flooded NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is a backwater slough adjacent to cleared field that is affected by beaver activity. Field Sheet 12-BWTL4WET1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	
<u>X</u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations:			
Surface water present?	Yes <u>X</u> No <u> </u>	Depth (inches): <u>6</u>	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Water table present?	Yes <u>X</u> No <u> </u>	Depth (inches): <u>surface</u>	
Saturation present? (includes capillary fringe)	Yes <u>X</u> No <u> </u>	Depth (inches): <u>surface</u>	

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

Remarks: **Backwater slough adjacent to cleared field, extends out into ag field. Likely due to a beaver dam.**

SOIL

Sampling Point: **04-WTL-37-wet**

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 ¹	Loc2		
0-3	10YR 3 / 2	100					silt	high organics
3-12+	10YR 4 / 1	85	7.5YR 5 / 8	15			silty clay	mottled

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-37-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	3	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	3	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 12

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-37-wet Inundation in wetland



04-WTL-37-wet Flooded portion of wetland.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 8, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-37-upl
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): roadway slope Local relief (concave, convex, none): none Slope (%): 15%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.01073521 Long: -77.37299634 Datum: NAD-1983
 Soil Map Unit Name: Bojac sandy loam, 0 to 6 percent slopes, very rarely flooded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Slope adjacent to service/access road for railroad. Field Sheet 12-BWTL4UP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-37-up1**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Liquidambar styraciflua</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	Dominance Test worksheet: 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>66.67%</u> (A)
2 <u>Acer rubrum</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
50% of total cover <u>22.5</u> 20% of total cover: <u>9</u>				Prevalence Index worksheet 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>60</u> x 3 = <u>180</u> FACU species <u>5</u> x 4 = <u>20</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>65</u> (A) <u>200</u> (B) Prevalence Index = B/A = <u>3.08</u> Hydrophytic Vegetation Indicators: <u> </u> 1 -Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)
50% of total cover <u>10</u> 20% of total cover: <u>4</u>				
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				
1 <u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
2 <u>Liquidambar styraciflua</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
3 <u>Juniperus virginiana</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
50% of total cover <u>10</u> 20% of total cover: <u>4</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)				
1 <u>Smilax spp.</u>	<u>5</u>	<u>Y</u>		
2 _____				
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
9 _____				
10 _____				
11 _____				
12 _____				
50% of total cover <u>2.5</u> 20% of total cover: <u>1</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)				
1 <u>none</u>				
2 _____				
3 _____				
4 _____				
5 _____				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Remarks: (If observed, list morphological adaptations below).				

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes X No _____

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 8, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-38-wet
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): none Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.00765941 Long: -77.37261237 Datum: NAD-1983
 Soil Map Unit Name: Udorthents loamy, 0 to 15 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is a hardwood forested wetland. Field Sheet 12-BWTL5WET1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>6</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-38-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>Acer rubrum</u>	<u>20</u>		<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)	
2 <u>Quercus phellos</u>	<u>15</u>		<u>FACW</u>	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 _____					
5 _____					
6 _____					
7 _____					
8 _____					
50% of total cover <u>17.5</u>					
20% of total cover: <u>7</u>					
<u>35</u> = Total Cover					
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet	
1 <u>Acer rubrum</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	Total % Cover of: Multiply by:	
2 <u>Liquidambar styraciflua</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	OBL species <u>0</u> x 1 = <u>0</u>	
3 _____				FACW species <u>15</u> x 2 = <u>30</u>	
4 _____				FAC species <u>40</u> x 3 = <u>120</u>	
5 _____				FACU species <u>0</u> x 4 = <u>0</u>	
6 _____				UPL species <u>0</u> x 5 = <u>0</u>	
7 _____				Column totals <u>55</u> (A) <u>150</u> (B)	
8 _____				Prevalence Index = B/A = <u>2.73</u>	
50% of total cover <u>10</u>					
20% of total cover: <u>4</u>					
<u>20</u> = Total Cover					
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:	
1 <u>none</u>				<u> </u> 1 -Rapid Test for Hydrophytic Vegetation	
2 _____				<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
3 _____				<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0	
4 _____				<u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)	
5 _____					
6 _____					
7 _____					
8 _____					
9 _____					
10 _____					
11 _____					
12 _____					
50% of total cover <u>0</u>					
20% of total cover: <u>0</u>					
<u>0</u> = Total Cover					
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Definitions of Four Vegetation Strata:	
1 <u>none</u>				Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
2 _____				Sapling/shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
3 _____				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
4 _____				Woody vines - All woody vines greater than 3.28 ft in height.	
5 _____					
50% of total cover <u>0</u>					
20% of total cover: <u>0</u>					
<u>0</u> = Total Cover					
				Hydrophytic vegetation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: **04-WTL-38-wet**

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 ¹	Loc ²		
0-3	10YR 2 / 1	100					loam	mucky, organic
3-12+	10YR 4 / 1	100					silty clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input checked="" type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-38-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	0	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 4

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-38-wet Typical habitat in wetland.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 8, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-38-upl
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 4%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.00772935 Long: -77.37258529 Datum: NAD-1983
 Soil Map Unit Name: Udorthents loamy, 0 to 15 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Adjacent to cleared agricultural field; upland on edge of backwater slough, probably beaver influenced, Manmade features such as ponds are connected to this. Field Sheet 12-BWTL5UP1.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-38-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
1 <u>Platanus occidentalis</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: 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)	
2					
3					
4					
5					
6					
7					
8					
50% of total cover <u>15</u> 20% of total cover: <u>6</u>				Prevalence Index worksheet Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>30</u> x 2 = <u>60</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>40</u> (A) <u>90</u> (B) Prevalence Index = B/A = <u>2.25</u>	
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)					
1 <u>none</u>					Hydrophytic Vegetation Indicators: <u> </u> 1 -Rapid Test for Hydrophytic Vegetation <u> </u> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)
2					
3					
4					
5					
6					
7					
8					
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				¹ 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 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 vines - All woody vines greater than 3.28 ft in height.	
Herb Stratum (Plot Size: <u>5' radius</u>)					
1 <u>Smilax spp.</u>	<u>15</u>	<u>Y</u>			Hydrophytic vegetation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2 <u>Lonicera spp.</u>	<u>15</u>	<u>Y</u>			
3 <u>Rubus spp.</u>	<u>5</u>	<u>N</u>			
4					
5					
6					
7					
8					
9					
10					
11					
12					
50% of total cover <u>17.5</u> 20% of total cover: <u>7</u>					
Woody Vine Stratum (Plot Size: <u>30' radius</u>)					
1 <u>Campsis radicans</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>		
2					
3					
4					
5					
50% of total cover <u>5</u> 20% of total cover: <u>2</u>					

Remarks: (If observed, list morphological adaptations below).
Eastern red cedars found in other upland areas.

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 ¹	Loc2		
0-2	10YR 3 / 2	100					loam	mostly organics
2-12+	10YR 4 / 2	100					clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 **X**

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 8, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-39-wet
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): slough/floodplain Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.00104348 Long: -77.37163715 Datum: NAD-1983
 Soil Map Unit Name: slough is mapped as water on the web soil survey NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This wetland includes a slough and bottomland hardwoods. Field Sheet 12-BWTL6WET1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) ___ Aquatic Fauna (B13) ___ High Water Table (A2) ___ Marl Deposits (B15) (LRR U) ___ Saturation (A3) ___ Hydrogen Sulfide Odor (C1) ___ Water Marks (B1) ___ Oxidized Rhizospheres on Living Roots (C3) ___ Sediment Deposits (B2) ___ Presence of Reduced Iron (C4) ___ Drift Deposits (B3) ___ Recent Iron Reduction in Tilled Soils (C6) ___ Algal Mat or Crust (B4) ___ Thin Muck Surface (C7) ___ Iron Deposits (B5) ___ Other (Explain in Remarks) ___ Inundation Visible on Aerial Imagery (B7) ___ Water-Stained Leaves (B9)	___ 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) ___ Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ FAC-Neutral Test (D5) ___ Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>2</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-39-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>Pinus taeda</u>	<u>70</u>		<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)	
2 <u>Liquidambar styraciflua</u>	<u>15</u>		<u>FAC</u>	Total Number of Dominant Species Across all Strata: <u>4</u> (B)	
3 <u>Acer rubrum</u>	<u>10</u>		<u>FAC</u>	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)	
4 _____					
5 _____					
6 _____					
7 _____					
8 _____					
<u>95</u> = Total Cover 50% of total cover <u>47.5</u> 20% of total cover: <u>19</u>				Prevalence Index worksheet	
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				Total % Cover of: Multiply by:	
1 <u>Pinus taeda</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	OBL species <u>0</u>	x 1 = <u>0</u>
2 <u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	FACW species <u>5</u>	x 2 = <u>10</u>
3 <u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	FAC species <u>140</u>	x 3 = <u>420</u>
4 <u>Betula nigra</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	FACU species <u>0</u>	x 4 = <u>0</u>
5 _____				UPL species <u>0</u>	x 5 = <u>0</u>
6 _____				Column totals <u>145</u> (A)	<u>430</u> (B)
7 _____				Prevalence Index = B/A = <u>2.97</u>	
8 _____				Hydrophytic Vegetation Indicators:	
<u>45</u> = Total Cover 50% of total cover <u>22.5</u> 20% of total cover: <u>9</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 <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
Herb Stratum (Plot Size: <u>5' radius</u>)				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
1 <u>none</u>				Definitions of Four Vegetation Strata:	
2 _____				Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
3 _____				Sapling/shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
4 _____				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
5 _____				Woody vines - All woody vines greater than 3.28 ft in height.	
6 _____					
7 _____					
8 _____					
9 _____					
10 _____					
11 _____					
12 _____					
<u>0</u> = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>				Hydrophytic vegetation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Woody Vine Stratum (Plot Size: <u>30' radius</u>)					
1 <u>Campsis radicans</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>		
2 _____					
3 _____					
4 _____					
5 _____					
<u>5</u> = Total Cover 50% of total cover <u>2.5</u> 20% of total cover: <u>1</u>					
Remarks: (If observed, list morphological adaptations below).					

SOIL

Sampling Point: **04-WTL-39-wet**

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 ¹	Loc2		
0-12+	10YR 4 / 1	100					silty clay	oxidized root channels

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input checked="" type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-39-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.		
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.		
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.		
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.		
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.		
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.		

Total Score 0

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-39-wet View of ponded area



04-WTL-39-wet View of wetland

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 8, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-39-upl
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 5%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 38.00107028 Long: -77.37149328 Datum: NAD-1983
 Soil Map Unit Name: Tomotley-Roanoke complex, 0 to 2 percent slopes, rarely flooded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: This is the upland point that is moderately well drained. Field Sheet 12-BWTL6UP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-39-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Pinus taeda</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>	Dominance Test worksheet: 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)
2 <u>Liquidambar styraciflua</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
50% of total cover <u>35</u>		<u>70</u> = Total Cover		Prevalence Index worksheet 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>10</u> x 4 = <u>40</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>125</u> (A) <u>385</u> (B)
20% of total cover: <u>14</u>				
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				
1 <u>Liquidambar styraciflua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	
2 <u>Pinus taeda</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	
3 <u>Quercus falcata</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
50% of total cover <u>22.5</u>		<u>45</u> = Total Cover		
20% of total cover: <u>9</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)				
1 <u>none</u>				
2 _____				
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
9 _____				
10 _____				
11 _____				
12 _____				
50% of total cover <u>0</u>		<u>0</u> = Total Cover		
20% of total cover: <u>0</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)				
1 <u>Campsis radicans</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
2 _____				
3 _____				
4 _____				
5 _____				
50% of total cover <u>5</u>		<u>10</u> = Total Cover		
20% of total cover: <u>2</u>				

Prevalence Index = B/A = 3.08

Hydrophytic Vegetation Indicators:

- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0
- Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines** - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present?

Yes No

Remarks: (If observed, list morphological adaptations below).

Pine needles litter surface area.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 8, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-40-wet
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.99796239 Long: -77.37054516 Datum: NAD-1983
 Soil Map Unit Name: Chastain silt loam, 0 to 2 percent slopes, ponded NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is part of a forested wetland. This wetland is hydrologically connected to the wetland west of the tracks (04-WTL-41), therefore, the same datasheet was used. Field Sheet 12-BWTL7WET1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>2</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-40-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>Acer rubrum</u>	<u>30</u>		<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)	
2 <u>Nyssa sylvatica</u>	<u>10</u>		<u>FAC</u>	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 _____				Prevalence Index worksheet	
5 _____				Total % Cover of: _____ Multiply by: _____	
6 _____				OBL species <u>5</u> x 1 = <u>5</u>	
7 _____				FACW species <u>0</u> x 2 = <u>0</u>	
8 _____				FAC species <u>45</u> x 3 = <u>135</u>	
	<u>40</u> = Total Cover			FACU species <u>0</u> x 4 = <u>0</u>	
	50% of total cover <u>20</u>	20% of total cover: <u>8</u>		UPL species <u>0</u> x 5 = <u>0</u>	
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				Column totals <u>50</u> (A) <u>140</u> (B)	
1 <u>Rhus spp.</u>	<u>1</u>			Prevalence Index = B/A = <u>2.80</u>	
2 _____				Hydrophytic Vegetation Indicators:	
3 _____				<u> </u> 1 -Rapid Test for Hydrophytic Vegetation	
4 _____				<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
5 _____				<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0	
6 _____				<u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)	
7 _____					
8 _____					
	<u>1</u> = Total Cover			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
	50% of total cover <u>0.5</u>	20% of total cover: <u>0.2</u>		Definitions of Four Vegetation Strata:	
Herb Stratum (Plot Size: <u>5' radius</u>)				Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
1 <u>Microstegium vimineum</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	Sapling/shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
2 <u>Juncus effusus</u>	<u>5</u>	<u>Y</u>	<u>OBL</u>	Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
3 <u>Bidens spp.</u>	<u>1</u>	<u>N</u>		Woody vines - All woody vines greater than 3.28 ft in height.	
4 _____					
5 _____					
6 _____					
7 _____					
8 _____					
9 _____					
10 _____					
11 _____					
12 _____					
	<u>11</u> = Total Cover			Hydrophytic vegetation present? Yes <input checked="" type="checkbox"/> No _____	
	50% of total cover <u>5.5</u>	20% of total cover: <u>2.2</u>			
Woody Vine Stratum (Plot Size: <u>30' radius</u>)					
1 <u>none</u>					
2 _____					
3 _____					
4 _____					
5 _____					
	<u>0</u> = Total Cover				
	50% of total cover <u>0</u>	20% of total cover: <u>0</u>			

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: **04-WTL-40-wet**

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 ¹	Loc ²		
0-12+	10YR 2 / 1	100					clay	organics

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input checked="" type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-40-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 7

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-40-wet View of Culvert 02, concrete 36"



04-WTL-40-wet View of wetland



04-WTL-40-wet View of wetland

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 8, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-40-upl
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): ballast slope Local relief (concave, convex, none): none Slope (%): 20%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.99798858 Long: -77.3705801 Datum: NAD-1983
 Soil Map Unit Name: Chastain silt loam, 0 to 2 percent slopes, ponded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Area is in upland adjacent to WTL-7 and rail. Field Sheet 12-BWTL7UP1.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Wetland hydrology is not present.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-40-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Platanus occidentalis</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>
2 <u>Acer rubrum</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
3 _____	_____	_____	_____
4 _____	_____	_____	_____
5 _____	_____	_____	_____
6 _____	_____	_____	_____
7 _____	_____	_____	_____
8 _____	_____	_____	_____
_____ = Total Cover			
50% of total cover <u>22.5</u>		20% of total cover: <u>9</u>	

Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Ilex opaca</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
2 <u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3 <u>Juniperus virginiana</u>	<u>5</u>	<u>N</u>	<u>FACU</u>
4 <u>Amelanchier spp.</u>	<u>5</u>	<u>N</u>	_____
5 _____	_____	_____	_____
6 _____	_____	_____	_____
7 _____	_____	_____	_____
8 _____	_____	_____	_____
_____ = Total Cover			
50% of total cover <u>17.5</u>		20% of total cover: <u>7</u>	

Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Lonicera spp.</u>	<u>20</u>	<u>Y</u>	_____
2 <u>Smilax spp.</u>	<u>10</u>	<u>Y</u>	_____
3 _____	_____	_____	_____
4 _____	_____	_____	_____
5 _____	_____	_____	_____
6 _____	_____	_____	_____
7 _____	_____	_____	_____
8 _____	_____	_____	_____
9 _____	_____	_____	_____
10 _____	_____	_____	_____
11 _____	_____	_____	_____
12 _____	_____	_____	_____
_____ = Total Cover			
50% of total cover <u>15</u>		20% of total cover: <u>6</u>	

Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>none</u>	_____	_____	_____
2 _____	_____	_____	_____
3 _____	_____	_____	_____
4 _____	_____	_____	_____
5 _____	_____	_____	_____
_____ = Total Cover			
50% of total cover <u>0</u>		20% of total cover: <u>0</u>	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>30</u>	x 2 = <u>60</u>
FAC species <u>40</u>	x 3 = <u>120</u>
FACU species <u>5</u>	x 4 = <u>20</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>75</u> (A)	<u>200</u> (B)

Prevalence Index = B/A = 2.67

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0

_____ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).

Plants typical of upland areas that lack wetland hydrology.

SOIL

Sampling Point: **04-WTL-40-upl**

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 ¹	Loc ²		
0-12	10YR 3 / 1	100					loamy sand	dry

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks: **Soils are much drier, despite being depleted.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 8, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-41-wet
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.99796239 Long: -77.37054516 Datum: NAD-1983

Soil Map Unit Name: Chastain silt loam, 0 to 2 percent slopes, ponded NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is part of a forested wetland. Field Sheet 12-BWTL7WET1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u>X</u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>2</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	---

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

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-41-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status																									
1 Acer rubrum	30		FAC	Dominance Test worksheet: 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)																								
2 Nyssa sylvatica	10		FAC																									
3																												
4																												
5																												
6																												
7																												
8																												
50% of total cover 20		40 = Total Cover		Prevalence Index worksheet <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;"></td> <td style="width:25%; text-align:center">Total % Cover of:</td> <td style="width:25%; text-align:center">Multiply by:</td> </tr> <tr> <td>OBL species</td> <td style="text-align:center"><u>5</u></td> <td style="text-align:center">x 1 = <u>5</u></td> </tr> <tr> <td>FACW species</td> <td style="text-align:center"><u>0</u></td> <td style="text-align:center">x 2 = <u>0</u></td> </tr> <tr> <td>FAC species</td> <td style="text-align:center"><u>45</u></td> <td style="text-align:center">x 3 = <u>135</u></td> </tr> <tr> <td>FACU species</td> <td style="text-align:center"><u>0</u></td> <td style="text-align:center">x 4 = <u>0</u></td> </tr> <tr> <td>UPL species</td> <td style="text-align:center"><u>0</u></td> <td style="text-align:center">x 5 = <u>0</u></td> </tr> <tr> <td>Column totals</td> <td style="text-align:center"><u>50</u> (A)</td> <td style="text-align:center"><u>140</u> (B)</td> </tr> <tr> <td colspan="3" style="text-align:right">Prevalence Index = B/A = <u>2.80</u></td> </tr> </table> Hydrophytic Vegetation Indicators: <u> </u> 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 <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)		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>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>50</u> (A)	<u>140</u> (B)	Prevalence Index = B/A = <u>2.80</u>		
	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>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>50</u> (A)	<u>140</u> (B)																										
Prevalence Index = B/A = <u>2.80</u>																												
50% of total cover 0.5		1 = Total Cover																										
20% of total cover: 0.2																												
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)																												
1 Rhus spp.	1																											
2																												
3																												
4																												
5																												
6																												
7																												
8																												
50% of total cover 0.5		1 = Total Cover																										
20% of total cover: 0.2																												
Herb Stratum (Plot Size: <u>5' radius</u>)																												
1 Microstegium vimineum	5	Y	FAC																									
2 Juncus effusus	5	Y	OBL																									
3 Bidens spp.	1	N																										
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												
50% of total cover 5.5		11 = Total Cover																										
20% of total cover: 2.2																												
Woody Vine Stratum (Plot Size: <u>30' radius</u>)																												
1 none																												
2																												
3																												
4																												
5																												
50% of total cover 0		0 = Total Cover																										
20% of total cover: 0																												
Hydrophytic vegetation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																												
Remarks: (If observed, list morphological adaptations below).																												

SOIL

Sampling Point: **04-WTL-41-wet**

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 ¹	Loc2		
0-12+	10YR 2 / 1	100					clay	organics

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input checked="" type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-41-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 7

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-41-wet View of Culvert 02, concrete 36"



04-WTL-41-wet View of wetland



04-WTL-41-wet View of wetland

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 8, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-41-upl
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): ballast slope Local relief (concave, convex, none): none Slope (%): 20%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.99798858 Long: -77.3705801 Datum: NAD-1983
 Soil Map Unit Name: Chastain silt loam, 0 to 2 percent slopes, ponded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Area is in upland adjacent to WTL-7 and rail. Field Sheet 12-BWTL7UP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
--	---

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

Remarks: **Wetland hydrology is not present.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-41-up1**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Platanus occidentalis</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: 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>66.67%</u> (A)
2 <u>Acer rubrum</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
50% of total cover <u>22.5</u> 20% of total cover: <u>9</u>				Prevalence Index worksheet Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>30</u> x 2 = <u>60</u> FAC species <u>40</u> x 3 = <u>120</u> FACU species <u>5</u> x 4 = <u>20</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>75</u> (A) <u>200</u> (B) Prevalence Index = B/A = <u>2.67</u>
50% of total cover <u>17.5</u> 20% of total cover: <u>7</u>				
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				
1 <u>Ilex opaca</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	
2 <u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
3 <u>Juniperus virginiana</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
4 <u>Amelanchier spp.</u>	<u>5</u>	<u>N</u>		
5 _____				
6 _____				
7 _____				
8 _____				
50% of total cover <u>17.5</u> 20% of total cover: <u>7</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)				
1 <u>Lonicera spp.</u>	<u>20</u>	<u>Y</u>		
2 <u>Smilax spp.</u>	<u>10</u>	<u>Y</u>		
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
9 _____				
10 _____				
11 _____				
12 _____				
50% of total cover <u>15</u> 20% of total cover: <u>6</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)				
1 <u>none</u>				
2 _____				
3 _____				
4 _____				
5 _____				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
 Total Number of Dominant Species Across all Strata: 6 (B)
 Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A)

Prevalence Index worksheet
 Total % Cover of: Multiply by:
 OBL species 0 x 1 = 0
 FACW species 30 x 2 = 60
 FAC species 40 x 3 = 120
 FACU species 5 x 4 = 20
 UPL species 0 x 5 = 0
 Column totals 75 (A) 200 (B)

Prevalence Index = B/A = 2.67

Hydrophytic Vegetation Indicators:
1 -Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0
 _____ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No _____

Remarks: (If observed, list morphological adaptations below).
Plants typical of upland areas that lack wetland hydrology.

SOIL

Sampling Point: **04-WTL-41-upl**

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 ¹	Loc ²		
0-12	10YR 3 / 1	100					loamy sand	dry

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 **X**

Remarks: **Soils are much drier, despite being depleted.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 9, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-42-wet-1
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 0%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: N/A Long: N/A Datum: NAD-1983
 Soil Map Unit Name: Bibb-Chastain complex, 0 to 2 percent slopes, frequently flooded NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Backwater slough/swamp located near signals, south of MP36. Field Sheet 12-B-WTL8-WET1. Note: Could not safely get lat/long in flooded swamp.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u>X</u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>6</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	--

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

Remarks: **Backwater slough, extends all the way up to the ballast. Loblolly pine and river birch are present.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-42-wet-1**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1 <u>Quercus phellos</u>	<u>30</u>		<u>FACW</u>	Dominance Test worksheet: 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 <u>Acer rubrum</u>	<u>10</u>		<u>FAC</u>	
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
<u>40</u> = Total Cover 50% of total cover <u>20</u> 20% of total cover: <u>8</u>				Prevalence Index worksheet Total % Cover of: _____ Multiply by: _____ OBL species <u>1</u> x 1 = <u>1</u> FACW species <u>30</u> x 2 = <u>60</u> FAC species <u>30</u> x 3 = <u>90</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>61</u> (A) <u>151</u> (B) Prevalence Index = B/A = <u>2.48</u>
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Liquidambar styraciflua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	
2 _____				
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
<u>20</u> = Total Cover 50% of total cover <u>10</u> 20% of total cover: <u>4</u>				Hydrophytic Vegetation Indicators: <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 <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Juncus effusus</u>	<u>1</u>		<u>OBL</u>	
2 <u>Carex spp.</u>	<u>1</u>			
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
9 _____				
10 _____				
11 _____				
12 _____				
<u>2</u> = Total Cover 50% of total cover <u>1</u> 20% of total cover: <u>0.4</u>				¹ 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 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 vines - All woody vines greater than 3.28 ft in height.
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				
2 _____				
3 _____				
4 _____				
5 _____				
<u>0</u> = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Remarks: (If observed, list morphological adaptations below).				

SOIL

Sampling Point: **04-WTL-42-wet-1**

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 ¹	Loc ²		
0-12+	10YR 3 / 1	100					silt loam	clay with gravel

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input checked="" type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-42-wet-1

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	2	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 11

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-42-wet-1 View of wetland



04-WTL-42-wet-1 View of wetland



04-WTL-42-wet-1 View of upland

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-42-upl-1**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
6				
7				
8				

0 = Total Cover
50% of total cover 0 20% of total cover: 0

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Ilex opaca</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				

5 = Total Cover
50% of total cover 2.5 20% of total cover: 1

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Festuca arundinaceus</u>	<u>20</u>	<u>Y</u>	
2	<u>Verbascum thapsus</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

40 = Total Cover
50% of total cover 20 20% of total cover: 8

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
50% of total cover 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 33.33% (A)

Prevalence Index worksheet

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>20</u>	x 4 = <u>80</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>25</u>	(A) <u>95</u> (B)

Prevalence Index = B/A = 3.80

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0
 - Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No X

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: **04-WTL-42-upl-1**

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 ¹	Loc ²		
								ballast

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils ³ :		
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)			
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)			
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)			
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)			
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)			
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)				
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.			
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)				
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)				
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)				
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)				
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)				
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)					

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric soil present? Yes _____ No X

Remarks: **Ballast. Could not get soil core in ballast fill.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 9, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-42-wet-2
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 0%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: N/A Long: N/A Datum: NAD-1983
 Soil Map Unit Name: Bibb-Chastain complex, 0 to 2 percent slopes, frequently flooded NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is a large swamp. Field Sheet 12-B-WTL8-WET2.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u>X</u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>6-12</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	--

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

Remarks: **Southern edge of wetland, steep bank drops off on north and south boundaries of wetland.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-42-wet-2**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>Nyssa sylvatica</u>	<u>15</u>		<u>FAC</u>	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 _____				Prevalence Index worksheet	
5 _____				Total % Cover of:	Multiply by:
6 _____				OBL species <u>0</u> x 1 = <u>0</u>	
7 _____				FACW species <u>5</u> x 2 = <u>10</u>	
8 _____				FAC species <u>25</u> x 3 = <u>75</u>	
	<u>15</u> = Total Cover			FACU species <u>0</u> x 4 = <u>0</u>	
	50% of total cover <u>7.5</u>	20% of total cover: <u>3</u>		UPL species <u>0</u> x 5 = <u>0</u>	
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				Column totals <u>30</u> (A) <u>85</u> (B)	
1 <u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	Prevalence Index = B/A = <u>2.83</u>	
2 <u>Amelanchier spp.</u>	<u>10</u>	<u>Y</u>		Hydrophytic Vegetation Indicators:	
3 <u>Betula nigra</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>	<input type="checkbox"/> 1 -Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
4 _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
5 _____				Definitions of Four Vegetation Strata:	
6 _____				Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
7 _____				Sapling/shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
8 _____				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
9 _____				Woody vines - All woody vines greater than 3.28 ft in height.	
10 _____					
11 _____					
12 _____					
	<u>25</u> = Total Cover			Hydrophytic vegetation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
	50% of total cover <u>12.5</u>	20% of total cover: <u>5</u>			
Herb Stratum (Plot Size: <u>5' radius</u>)					
1 <u>Carex spp.</u>	<u>20</u>	<u>Y</u>			
2 _____					
3 _____					
4 _____					
5 _____					
6 _____					
7 _____					
8 _____					
9 _____					
10 _____					
11 _____					
12 _____					
	<u>20</u> = Total Cover				
	50% of total cover <u>10</u>	20% of total cover: <u>4</u>			
Woody Vine Stratum (Plot Size: <u>30' radius</u>)					
1 <u>none</u>					
2 _____					
3 _____					
4 _____					
5 _____					
	<u>0</u> = Total Cover				
	50% of total cover <u>0</u>	20% of total cover: <u>0</u>			

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: **04-WTL-42-wet-2**

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 ¹	Loc ²		
0-2	10YR 2 / 1	100					loam	muck
2-10	10YR 5 / 1	100					clay	well compacted
10-12+	10YR 3 / 1	100					silt loam	loose organics

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 9, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-42-upl-2
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): ballast toe Local relief (concave, convex, none): none Slope (%): 5%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.99254878 Long: -77.36844252 Datum: NAD-1983
 Soil Map Unit Name: Bojac sandy loam, 0 to 6 percent slopes, very rarely flooded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	
Remarks: Upland along 2-track/logging road, southern boundary of wetland. Field Sheet 12-B-WTL8-UP2.			

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations:	
Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (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: **04-WTL-42-upl-2**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Quercus phellos</u>	<u>15</u>	<u>Y</u>	<u>FACW</u>
2	<u>Pinus taeda</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				
8				

30 = Total Cover
50% of total cover 15 20% of total cover: 6

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
6				
7				
8				

0 = Total Cover
50% of total cover 0 20% of total cover: 0

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Smilax spp.</u>	<u>10</u>	<u>Y</u>	
2	<u>Carex spp.</u>	<u>10</u>	<u>Y</u>	
3	<u>Pinus taeda</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>
4				
5				
6				
7				
8				
9				
10				
11				
12				

25 = Total Cover
50% of total cover 12.5 20% of total cover: 5

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
50% of total cover 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 60.00% (A)

Prevalence Index worksheet

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>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>35</u> (A)	<u>90</u> (B)

Prevalence Index = B/A = 2.57

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).

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 ¹	Loc ²		
0-4	10YR 2 / 2						loam	high organics
4-12+	10YR 4 / 4						sand	sandy gravel

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 9, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-43-wet
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.99057204 Long: -77.36747332 Datum: NAD-1983
 Soil Map Unit Name: Bojac sandy loam, 0 to 6 percent slopes, very rarely flooded NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is a small forested wetland. Field Sheet 12-B-WTL9-WET1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>2</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Surface water at edge where soil sample was taken, wetland gets deeper fast.**

SOIL

Sampling Point: **04-WTL-43-wet**

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 ¹	Loc ²		
0-12+	10YR 2 / 1	100					silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input checked="" type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-43-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	2	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 9

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-43-wet View of wetland

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 9, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-43-upl
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 10%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.9905821 Long: -77.36762784 Datum: NAD-1983
 Soil Map Unit Name: Bojac sandy loam, 0 to 6 percent slopes, very rarely flooded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Upland slope about 30 feet from edge of wetlands. Wetland extends to edge of ballast. Field Sheet 12-B-WTL9-UP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-43-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Quercus alba</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</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>20.00%</u> (A)
2 <u>Quercus rubra</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
50% of total cover <u>10</u>		<u>20</u> = Total Cover		Prevalence Index worksheet 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>30</u> x 4 = <u>120</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>40</u> (A) <u>150</u> (B)
20% of total cover: <u>4</u>				
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				
1 <u>Quercus rubra</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
2 <u>Cornus drummondii</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
50% of total cover <u>10</u>		<u>20</u> = Total Cover		
20% of total cover: <u>4</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)				
1 <u>Smilax spp.</u>	<u>15</u>	<u>Y</u>		
2 _____				
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
9 _____				
10 _____				
11 _____				
12 _____				
50% of total cover <u>7.5</u>		<u>15</u> = Total Cover		
20% of total cover: <u>3</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)				
1 <u>none</u>				
2 _____				
3 _____				
4 _____				
5 _____				
50% of total cover <u>0</u>		<u>0</u> = Total Cover		
20% of total cover: <u>0</u>				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across all Strata: 5 (B)
 Percent of Dominant Species that are OBL, FACW, or FAC: 20.00% (A)

Prevalence Index worksheet
 Total % Cover of: Multiply by:
 OBL species 0 x 1 = 0
 FACW species 0 x 2 = 0
 FAC species 10 x 3 = 30
 FACU species 30 x 4 = 120
 UPL species 0 x 5 = 0
 Column totals 40 (A) 150 (B)
 Prevalence Index = B/A = 3.75

Hydrophytic Vegetation Indicators:
1 -Rapid Test for Hydrophytic Vegetation
2 - Dominance Test is >50%
3 - Prevalence Index is ≤3.0
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes _____ No X

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: **04-WTL-43-upl**

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 ¹	Loc2		
0-2	10YR 2 / 1							almost all organics
2-5	10YR 3 / 2						loam	
5-12+	10YR 4 / 1						sandy clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators 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 **X**

Remarks: **Ballast.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 9, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-44-wet
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.98580325 Long: -77.36546144 Datum: NAD-1983
 Soil Map Unit Name: Bojac sandy loam, 0 to 6 percent slopes, very rarely flooded NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Northern edge of wetland extends to edge of ballast; steeply sloped. Field Sheet 12-B-WTL10-WET1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>2</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-44-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status																													
1 <u>Betula nigra</u>	<u>30</u>		<u>FACW</u>	Dominance Test worksheet: 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 <u>Liquidambar styraciflua</u>	<u>1</u>		<u>FAC</u>																													
3 <u>Nyssa sylvatica</u>	<u>1</u>		<u>FAC</u>																													
4 _____																																
5 _____																																
6 _____																																
7 _____																																
8 _____																																
<u>32</u> = Total Cover 50% of total cover <u>16</u> 20% of total cover: <u>6.4</u>				Prevalence Index worksheet <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;"></td> <td style="text-align:center;">Total % Cover of:</td> <td style="width:50%;"></td> <td style="text-align:center;">Multiply by:</td> </tr> <tr> <td>OBL species</td> <td style="text-align:center;"><u>1</u></td> <td>x 1 =</td> <td style="text-align:center;"><u>1</u></td> </tr> <tr> <td>FACW species</td> <td style="text-align:center;"><u>30</u></td> <td>x 2 =</td> <td style="text-align:center;"><u>60</u></td> </tr> <tr> <td>FAC species</td> <td style="text-align:center;"><u>12</u></td> <td>x 3 =</td> <td style="text-align:center;"><u>36</u></td> </tr> <tr> <td>FACU species</td> <td style="text-align:center;"><u>0</u></td> <td>x 4 =</td> <td style="text-align:center;"><u>0</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>43</u></td> <td>(A)</td> <td style="text-align:center;"><u>97</u> (B)</td> </tr> </table> <p style="text-align:right;">Prevalence Index = B/A = <u>2.26</u></p> Hydrophytic Vegetation Indicators: <u> </u> 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 <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)		Total % Cover of:		Multiply by:	OBL species	<u>1</u>	x 1 =	<u>1</u>	FACW species	<u>30</u>	x 2 =	<u>60</u>	FAC species	<u>12</u>	x 3 =	<u>36</u>	FACU species	<u>0</u>	x 4 =	<u>0</u>	UPL species	<u>0</u>	x 5 =	<u>0</u>	Column totals	<u>43</u>	(A)	<u>97</u> (B)
	Total % Cover of:		Multiply by:																													
OBL species	<u>1</u>	x 1 =	<u>1</u>																													
FACW species	<u>30</u>	x 2 =	<u>60</u>																													
FAC species	<u>12</u>	x 3 =	<u>36</u>																													
FACU species	<u>0</u>	x 4 =	<u>0</u>																													
UPL species	<u>0</u>	x 5 =	<u>0</u>																													
Column totals	<u>43</u>	(A)	<u>97</u> (B)																													
<u>10</u> = Total Cover 50% of total cover <u>5</u> 20% of total cover: <u>2</u>																																
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)																																
1 <u>Pinus taeda</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>																													
2 _____																																
3 _____																																
4 _____																																
5 _____																																
6 _____																																
7 _____																																
8 _____																																
<u>10</u> = Total Cover 50% of total cover <u>5</u> 20% of total cover: <u>2</u>																																
Herb Stratum (Plot Size: <u>5' radius</u>)																																
1 <u>Carex spp.</u>	<u>1</u>																															
2 <u>Juncus effusus</u>	<u>1</u>		<u>OBL</u>																													
3 _____																																
4 _____																																
5 _____																																
6 _____																																
7 _____																																
8 _____																																
9 _____																																
10 _____																																
11 _____																																
12 _____																																
<u>2</u> = Total Cover 50% of total cover <u>1</u> 20% of total cover: <u>0.4</u>																																
Woody Vine Stratum (Plot Size: <u>30' radius</u>)																																
1 <u>none</u>																																
2 _____																																
3 _____																																
4 _____																																
5 _____																																
<u>0</u> = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>																																
Hydrophytic vegetation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																																

Remarks: (If observed, list morphological adaptations below).
Woolgrass noted in water nearby.

SOIL

Sampling Point: **04-WTL-44-wet**

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 ¹	Loc2		
0-1	10YR 2 / 2	100					loam	organic
1-12+	10YR 2 / 1	100					silty clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

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

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric soil present? Yes X No _____

Remarks:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-44-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 6

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-44-wet View of wetland

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 9, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-44-upl
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 12%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.9858167 Long: -77.36549796 Datum: NAD-1983
 Soil Map Unit Name: Bojac sandy loam, 0 to 6 percent slopes, very rarely flooded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Upland data point on edge of pine tree stand (farmed). Field Sheet 12-B-WTL10-UP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-44-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 Fagus spp.	10	Y		Dominance Test worksheet: 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)
2 Pinus taeda	10	Y	FAC	
3				
4				
5				
6				
7				
8				
50% of total cover <u>10</u>		<u>20</u> = Total Cover		Prevalence Index worksheet 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>41</u> x 3 = <u>123</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>41</u> (A) <u>123</u> (B) Prevalence Index = B/A = <u>3.00</u>
20% of total cover: <u>4</u>				
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				
1 Pinus taeda	20	Y	FAC	
2 Aralia spinosa	10	Y	FAC	
3				
4				
5				
6				
7				
8				
50% of total cover <u>15</u>		<u>30</u> = Total Cover		
20% of total cover: <u>6</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)				
1 Smilax spp.	1			
2 Ilex opaca	1		FAC	
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
50% of total cover <u>1</u>		<u>2</u> = Total Cover		
20% of total cover: <u>0.4</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)				
1 none				
2				
3				
4				
5				
50% of total cover <u>0</u>		<u>0</u> = Total Cover		
20% of total cover: <u>0</u>				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
 Total Number of Dominant Species Across all Strata: 4 (B)
 Percent of Dominant Species that are OBL, FACW, or FAC: 75.00% (A)

Prevalence Index worksheet
 Total % Cover of: Multiply by:
 OBL species 0 x 1 = 0
 FACW species 0 x 2 = 0
 FAC species 41 x 3 = 123
 FACU species 0 x 4 = 0
 UPL species 0 x 5 = 0
 Column totals 41 (A) 123 (B)

 Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:
1 -Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).

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 ¹	Loc ²		
0-2	10YR 2 / 2						silt loam	high organic content
2-12+	10YR 2 / 1						loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 **X**

Remarks: **Color of uplands doesn't change, just lacks hydrology.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 9, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-45-wet
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.98461615 Long: -77.36487723 Datum: NAD-1983
 Soil Map Unit Name: Bojac sandy loam, 0 to 6 percent slopes, very rarely flooded NWI classification: PEM/PFO
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is an emergent/forested wetland. Field Sheet 12-B-WTL11-WET1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>2</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Presence of iron (orange) in water is evidence of seep. Wetland adjacent to ballast.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-45-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
1 <u>Alnus serrulata</u>	<u>15</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across all Strata: _____ (B) Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)	
2 _____					
3 _____					
4 _____					
5 _____					
6 _____					
7 _____					
8 _____					
50% of total cover <u>7.5</u> 20% of total cover: <u>3</u>				Prevalence Index worksheet Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column totals _____ (A) _____ (B) Prevalence Index = B/A = _____	
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
1 <u>none</u>					Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is >50% _____ 3 - Prevalence Index is ≤3.0 _____ Problematic Hydrophytic Vegetation ¹ (Explain)
2 _____					
3 _____					
4 _____					
5 _____					
6 _____					
7 _____					
8 _____					
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				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 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 vines - All woody vines greater than 3.28 ft in height.	
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
1 <u>Polygonum spp.</u>	<u>20</u>	<u>Y</u>			Hydrophytic vegetation present? Yes <u>X</u> No _____
2 <u>Carex spp.</u>	<u>15</u>	<u>Y</u>			
3 <u>Carex intumescens</u>	<u>15</u>	<u>Y</u>	<u>FACW</u>		
4 _____					
5 _____					
6 _____					
7 _____					
8 _____					
9 _____					
10 _____					
11 _____					
12 _____					
50% of total cover _____ 20% of total cover: _____					
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
1 <u>none</u>					
2 _____					
3 _____					
4 _____					
5 _____					
50% of total cover <u>0</u> 20% of total cover: <u>0</u>					

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: **04-WTL-45-wet**

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 ¹	Loc2		
0-12+	10YR 4 / 6	100					silt loam	oxidized muck

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input checked="" type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **Soils not typical due to iron oxidizing bacteria associated with seep. Orange color in surface water.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-45-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	2	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 8

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-45-wet View of wetland



04-WTL-45-wet View of channelization in wetland



04-WTL-45-wet View of evidence of iron oxidizing bacteria

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 9, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-45-upl
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): ballast slope Local relief (concave, convex, none): none Slope (%): 15%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.98455364 Long: -77.36482653 Datum: NAD-1983
 Soil Map Unit Name: Bibb-Chastain complex, 0 to 2 percent slopes, frequently flooded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Upland point is very well drained. Field Sheet 12-B-WTL11-UP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-45-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				
2				
3				
4				
5				
6				
7				
8				
50% of total cover <u>0</u> = Total Cover 20% of total cover: <u>0</u>				
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				
2				
3				
4				
5				
6				
7				
8				
50% of total cover <u>0</u> = Total Cover 20% of total cover: <u>0</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Polygonum spp.</u>	<u>90</u>	<u>Y</u>		
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
50% of total cover <u>45</u> = Total Cover 20% of total cover: <u>18</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				
2				
3				
4				
5				
50% of total cover <u>0</u> = Total Cover 20% of total cover: <u>0</u>				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A)

Prevalence Index worksheet

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>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>0</u>	(A) <u>0</u> (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No X

Remarks: (If observed, list morphological adaptations below).

Blackberry and Solidago nearby. Pine tree growing on ballast, most absent of vegetation.

SOIL

Sampling Point: **04-WTL-45-upl**

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 ¹	Loc ²		
0-12	10YR 2 / 1						sand	mostly coal cinders

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 **X**

Remarks: **Ballast fill material.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 9, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-46-wet
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.98149932 Long: -77.36393667 Datum: NAD-1983
 Soil Map Unit Name: State fine sandy loam, 0 to 2 percent slopes, very rarely flooded NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This bottomland hardwood wetland is located in floodplain of Mattaponi River. Field Sheet 12-B-WTL12-WET1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u><4 inches</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>8</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	---

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

Remarks: **Located in floodplain of Mattaponi River, thought not hydrologically connected.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-46-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>Quercus bicolor</u>	<u>20</u>			Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)	
2 <u>Liquidambar styraciflua</u>	<u>15</u>		<u>FAC</u>	Total Number of Dominant Species Across all Strata: <u>0</u> (B)	
3 <u>Acer rubrum</u>	<u>10</u>		<u>FAC</u>	Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)	
4 <u>Carpinus caroliniana</u>	<u>10</u>		<u>FAC</u>		
5 _____					
6 _____					
7 _____					
8 _____					
55 = Total Cover					
50% of total cover <u>27.5</u>					
20% of total cover: <u>11</u>					
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet	
1 <u>none</u>				Total % Cover of: _____ Multiply by: _____	
2 _____				OBL species <u>0</u> x 1 = <u>0</u>	
3 _____				FACW species <u>0</u> x 2 = <u>0</u>	
4 _____				FAC species <u>35</u> x 3 = <u>105</u>	
5 _____				FACU species <u>0</u> x 4 = <u>0</u>	
6 _____				UPL species <u>0</u> x 5 = <u>0</u>	
7 _____				Column totals <u>35</u> (A) <u>105</u> (B)	
8 _____				Prevalence Index = B/A = <u>3.00</u>	
0 = Total Cover					
50% of total cover <u>0</u>					
20% of total cover: <u>0</u>					
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:	
1 <u>Smilax spp.</u>	<u>1</u>			<u> </u> 1 -Rapid Test for Hydrophytic Vegetation	
2 _____				<u> </u> 2 - Dominance Test is >50%	
3 _____				<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0	
4 _____				<u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)	
5 _____					
6 _____					
7 _____					
8 _____					
9 _____					
10 _____					
11 _____					
12 _____					
1 = Total Cover					
50% of total cover <u>0.5</u>					
20% of total cover: <u>0.2</u>					
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Definitions of Four Vegetation Strata:	
1 <u>none</u>				Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
2 _____				Sapling/shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
3 _____				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
4 _____				Woody vines - All woody vines greater than 3.28 ft in height.	
5 _____					
0 = Total Cover					
50% of total cover <u>0</u>					
20% of total cover: <u>0</u>					
				Hydrophytic vegetation present? Yes <input checked="" type="checkbox"/> No _____	

Remarks: (If observed, list morphological adaptations below).
Large swamp white oaks and other mature trees in the area. Big holly stand between sample point and Mattaponi.

SOIL

Sampling Point: **04-WTL-46-wet**

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 ¹	Loc ²		
0-12+	10YR 3 / 1	100					silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **Soils substantially wetter in this area. The lower part of the wetland is saturated at surface, closer to tracks.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-46-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.		
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.		
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.		
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.		
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.		
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.		

Total Score 0

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-46-wet

Wetland habitat.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 9, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-46-upl
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.98140583 Long: -77.36385833 Datum: NAD-1983
 Soil Map Unit Name: State fine sandy loam, 0 to 2 percent slopes, very rarely flooded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? Are "normal circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Raised terrace in floodplain. Field Sheet 12-B-WTL12-UP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Mattaponi River floodplain, no hydrological connection between the wetland and the river.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-46-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Quercus phellos</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</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>80.00%</u> (A)
2 <u>Acer rubrum</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	
3 <u>Liquidambar styraciflua</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	
4 <u>Quercus palustris</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	
5 _____				
6 _____				
7 _____				
8 _____				
50% of total cover <u>30</u> 20% of total cover: <u>12</u>				Prevalence Index worksheet Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>30</u> x 2 = <u>60</u> FAC species <u>35</u> x 3 = <u>105</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>65</u> (A) <u>165</u> (B) Prevalence Index = B/A = <u>2.54</u>
50% of total cover <u>0.5</u> 20% of total cover: <u>0.2</u>				
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				
1 <u>Fagus spp.</u>	<u>1</u>			
2 _____				
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
50% of total cover <u>1</u> 20% of total cover: <u>0.2</u>				Hydrophytic Vegetation Indicators: <u> </u> 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 <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)
Herb Stratum (Plot Size: <u>5' radius</u>)				
1 <u>Smilax spp.</u>	<u>10</u>	<u>Y</u>		
2 <u>Ilex opaca</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
9 _____				
10 _____				
11 _____				
12 _____				
50% of total cover <u>7.5</u> 20% of total cover: <u>3</u>				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 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 vines - All woody vines greater than 3.28 ft in height.
Woody Vine Stratum (Plot Size: <u>30' radius</u>)				
1 <u>none</u>				
2 _____				
3 _____				
4 _____				
5 _____				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Remarks: (If observed, list morphological adaptations below).				

SOIL

Sampling Point: **04-WTL-46-upl**

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 ¹	Loc ²		
0-12+	10YR 3 / 2	100					silt loam	no mottles

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 **X**

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 9, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-47-wet
 Investigator(s): D. Mitchell, R, Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.98060298 Long: -77.3637516 Datum: NAD-1983
 Soil Map Unit Name: State fine sandy loam, 0 to 2 percent slopes, very rarely flooded NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Depression area holding water. Likely due to high water table/floodplain. Field Sheet 12-B-WTL13-WET1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>6-18</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Located in floodplain of Mattaponi River, although there appears to be no hydrologic connection.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-47-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
1 <u>Betula nigra</u>	<u>15</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across all Strata: _____ (B) Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)	
2 _____					
3 _____					
4 _____					
5 _____					
6 _____					
7 _____					
8 _____					
50% of total cover <u>7.5</u> 20% of total cover: <u>3</u>				Prevalence Index worksheet Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column totals _____ (A) _____ (B) Prevalence Index = B/A = _____	
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
1 <u>none</u>					Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is >50% _____ 3 - Prevalence Index is ≤3.0 _____ Problematic Hydrophytic Vegetation ¹ (Explain)
2 _____					
3 _____					
4 _____					
5 _____					
6 _____					
7 _____					
8 _____					
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				¹ 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 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 vines - All woody vines greater than 3.28 ft in height.	
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
1 <u>none</u>					
2 _____					
3 _____					
4 _____					
5 _____					
6 _____					
7 _____					
8 _____					
9 _____					
10 _____					
11 _____					
12 _____					
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				Hydrophytic vegetation present? Yes <u>X</u> No _____	
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
1 <u>none</u>					
2 _____					
3 _____					
4 _____					
5 _____					
50% of total cover <u>0</u> 20% of total cover: <u>0</u>					

Remarks: (If observed, list morphological adaptations below).

River birch surrounds ponded area. No other vegetation present in wetland depressional area.

SOIL

Sampling Point: **04-WTL-47-wet**

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 ¹	Loc2		
0-5	10YR 2 / 2	100						organics/saturated
5-12+	10YR 3 / 1	100					silty clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input checked="" type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **Slight sulfidic odor.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-47-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 6

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-47-wet Small depression in floodplain.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 9, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-47-upl
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 4%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.98052005 Long: -77.3637407 Datum: NAD-1983
 Soil Map Unit Name: State fine sandy loam, 0 to 2 percent slopes, very rarely flooded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Upland data point is on a well drained terrace. Field Sheet 12-B-WTL13-UP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Upland is in floodplain of Mattaponi River.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-47-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Ilex opaca</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	Dominance Test worksheet: 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>66.67%</u> (A)
2 <u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
3 <u>Quercus phellos</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
50% of total cover <u>17.5</u> <u>35</u> = Total Cover 20% of total cover: <u>7</u>				Prevalence Index worksheet 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>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>45</u> (A) <u>115</u> (B) Prevalence Index = B/A = <u>2.56</u>
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Quercus bicolor</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	
2 _____				
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
50% of total cover <u>5</u> <u>10</u> = Total Cover 20% of total cover: <u>2</u>				Hydrophytic Vegetation Indicators: <u>1</u> -Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> <u>2</u> - Dominance Test is >50% <input checked="" type="checkbox"/> <u>3</u> - Prevalence Index is ≤3.0 _____ Problematic Hydrophytic Vegetation ¹ (Explain)
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Smilax spp.</u>	<u>5</u>	<u>Y</u>		
2 <u>Carex spp.</u>	<u>5</u>	<u>Y</u>		
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
9 _____				
10 _____				
11 _____				
12 _____				
50% of total cover <u>5</u> <u>10</u> = Total Cover 20% of total cover: <u>2</u>				¹ 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 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 vines - All woody vines greater than 3.28 ft in height.
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				
2 _____				
3 _____				
4 _____				
5 _____				
50% of total cover <u>0</u> <u>0</u> = Total Cover 20% of total cover: <u>0</u>				
Remarks: (If observed, list morphological adaptations below).				

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 ¹	Loc ²		
0-12	10YR 4 / 1	90	7.5YR 5 / 8	10			silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **Soils dry in upland.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 10, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-48-wet
 Investigator(s): D. Mitchell, R, Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): seep Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.97689646 Long: -77.36353979 Datum: NAD-1983
 Soil Map Unit Name: Bibb-Chastain complex, 0 to 2 percent slopes, frequently flooded NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is a small stream seep wetland. Field Sheet 12-B-WTL14-WET1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u>X</u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>2</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Wetland occurs where stream seeps underground. Multiple seeps along length of stream contributing to hydrology of wetland and stream.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-48-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>Acer rubrum</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)	
2 <u>Betula nigra</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	Total Number of Dominant Species Across all Strata: <u>4</u> (B)	
3 <u>Carpinus caroliniana</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	Percent of Dominant Species that are OBL, FACW, or FAC: <u>75.00%</u> (A/B)	
4 _____					
5 _____					
6 _____					
7 _____					
8 _____					
<u>45</u> = Total Cover 50% of total cover <u>22.5</u> 20% of total cover: <u>9</u>				Prevalence Index worksheet	
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				Total % Cover of: Multiply by:	
1 <u>Carpinus caroliniana</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	OBL species <u>0</u>	x 1 = <u>0</u>
2 _____				FACW species <u>20</u>	x 2 = <u>40</u>
3 _____				FAC species <u>56</u>	x 3 = <u>168</u>
4 _____				FACU species <u>0</u>	x 4 = <u>0</u>
5 _____				UPL species <u>0</u>	x 5 = <u>0</u>
6 _____				Column totals <u>76</u>	(A) <u>208</u> (B)
7 _____				Prevalence Index = B/A = <u>2.74</u>	
8 _____				Hydrophytic Vegetation Indicators:	
<u>30</u> = Total Cover 50% of total cover <u>15</u> 20% of total cover: <u>6</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 <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
Herb Stratum (Plot Size: <u>5' radius</u>)				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
1 <u>Smilax spp.</u>	<u>5</u>	<u>Y</u>		Definitions of Four Vegetation Strata:	
2 _____				Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
3 _____				Sapling/shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
4 _____				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
5 _____				Woody vines - All woody vines greater than 3.28 ft in height.	
6 _____					
7 _____					
8 _____					
9 _____					
10 _____					
11 _____					
12 _____					
<u>5</u> = Total Cover 50% of total cover <u>2.5</u> 20% of total cover: <u>1</u>				Hydrophytic vegetation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Woody Vine Stratum (Plot Size: <u>30' radius</u>)					
1 <u>Campsis radicans</u>	<u>1</u>		<u>FAC</u>		
2 _____					
3 _____					
4 _____					
5 _____					
<u>1</u> = Total Cover 50% of total cover <u>0.5</u> 20% of total cover: <u>0.2</u>					
Remarks: (If observed, list morphological adaptations below).					

SOIL

Sampling Point: **04-WTL-48-wet**

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 ¹	Loc2		
0-2	10YR 2 / 2	100						organics
2-12+	10YR 3 / 1	95	10YR 5 / 8	5			clay loam	faint mottles, organic

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-48-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	0	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 3

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-48-wet

View of wetland

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 10, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-48-upl
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 7%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.97680072 Long: -77.36339116 Datum: NAD-1983
 Soil Map Unit Name: Bibb-Chastain complex, 0 to 2 percent slopes, frequently flooded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Upland on lower slope adjacent to access road and tracks. Field Sheet 12-B-WTL14-UP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-48-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Acer rubrum</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</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>71.43%</u> (A)
2 <u>Pinus taeda</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	
3 <u>Liquidambar styraciflua</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
50% of total cover <u>27.5</u> 20% of total cover: <u>11</u>				Prevalence Index worksheet 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>5</u> x 4 = <u>20</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>95</u> (A) <u>290</u> (B)
50% of total cover <u>20</u> 20% of total cover: <u>8</u>				
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				
1 <u>Acer rubrum</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	
2 <u>Liquidambar styraciflua</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	
3 <u>Fagus spp.</u>	<u>5</u>	<u>N</u>		
4 <u>Juniperus virginiana</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
5 _____				
6 _____				
7 _____				
8 _____				
50% of total cover <u>20</u> 20% of total cover: <u>8</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)				
1 <u>Lonicera spp.</u>	<u>5</u>	<u>Y</u>		
2 _____	<u>5</u>	<u>Y</u>		
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
9 _____				
10 _____				
11 _____				
12 _____				
50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)				
1 <u>Campsis radicans</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
2 _____				
3 _____				
4 _____				
5 _____				
50% of total cover <u>2.5</u> 20% of total cover: <u>1</u>				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)
 Total Number of Dominant Species Across all Strata: 7 (B)
 Percent of Dominant Species that are OBL, FACW, or FAC: 71.43% (A)

Prevalence Index worksheet
 Total % Cover of: Multiply by:
 OBL species 0 x 1 = 0
 FACW species 0 x 2 = 0
 FAC species 90 x 3 = 270
 FACU species 5 x 4 = 20
 UPL species 0 x 5 = 0
 Column totals 95 (A) 290 (B)
 Prevalence Index = B/A = 3.05

Hydrophytic Vegetation Indicators:
 1 -Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: **04-WTL-48-upl**

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 ¹	Loc ²		
0-4	10YR 2 / 2	100					loam	organic rich
4-12+	10YR 3 / 3	100					sand	coarse sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks: **Soils dry in upland.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 10, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-49-wet
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.9745027 Long: -77.36323186 Datum: NAD-1983
 Soil Map Unit Name: Altavista fine sandy loam, 0 to 2 percent slopes, very rarely flooded NWI classification: PEM
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is a small ditch/swale wetland. Field Sheet 12-B-WTL15-WET1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) ___ Aquatic Fauna (B13) ___ High Water Table (A2) ___ Marl Deposits (B15) (LRR U) ___ Saturation (A3) ___ Hydrogen Sulfide Odor (C1) ___ Water Marks (B1) ___ Oxidized Rhizospheres on Living Roots (C3) ___ Sediment Deposits (B2) ___ Presence of Reduced Iron (C4) ___ Drift Deposits (B3) ___ Recent Iron Reduction in Tilled Soils (C6) ___ Algal Mat or Crust (B4) ___ Thin Muck Surface (C7) ___ Iron Deposits (B5) ___ Other (Explain in Remarks) ___ Inundation Visible on Aerial Imagery (B7) ___ Water-Stained Leaves (B9)	___ 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) ___ Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ FAC-Neutral Test (D5) ___ Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u><3 inches</u> Water table present? Yes <u> </u> No <u> </u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Standing water at culvert. Saturated closer to access road.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-49-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>none</u>				Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)	
2 _____				Total Number of Dominant Species Across all Strata: _____ (B)	
3 _____				Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)	
4 _____					
5 _____					
6 _____					
7 _____					
8 _____					
50% of total cover <u>0</u> = Total Cover					
20% of total cover: <u>0</u>					
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet	
1 <u>Sumac spp.</u>	<u>1</u>			Total % Cover of:	Multiply by:
2 _____				OBL species _____	x 1 = _____
3 _____				FACW species _____	x 2 = _____
4 _____				FAC species _____	x 3 = _____
5 _____				FACU species _____	x 4 = _____
6 _____				UPL species _____	x 5 = _____
7 _____				Column totals _____	(A) _____ (B) _____
8 _____				Prevalence Index = B/A = _____	
50% of total cover <u>0.5</u> = Total Cover					
20% of total cover: <u>0.2</u>					
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:	
1 <u>Carex intumescens</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	<input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation	
2 <u>Symplocarpus foetidus</u>	<u>1</u>	<u>N</u>	<u>OBL</u>	_____ 2 - Dominance Test is >50%	
3 _____				_____ 3 - Prevalence Index is ≤3.0	
4 _____				_____ Problematic Hydrophytic Vegetation ¹ (Explain)	
5 _____					
6 _____					
7 _____					
8 _____					
9 _____					
10 _____					
11 _____					
12 _____					
50% of total cover <u>5.5</u> = Total Cover					
20% of total cover: <u>2.2</u>					
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Definitions of Four Vegetation Strata:	
1 <u>none</u>				Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
2 _____				Sapling/shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
3 _____				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
4 _____				Woody vines - All woody vines greater than 3.28 ft in height.	
5 _____					
50% of total cover <u>0</u> = Total Cover					
20% of total cover: <u>0</u>					
				Hydrophytic vegetation present? Yes <input checked="" type="checkbox"/> No _____	

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: **04-WTL-49-wet**

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 ¹	Loc ²		
0-12+	10YR 2 / 1	100					sand	sandy muck

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input checked="" type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-49-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	0	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	0	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 4

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-49-wet View of wetland looking toward the railroad



04-WTL-49-wet View of wetland looking away from the railroad



04-WTL-49-wet View of 3 foot concrete culvert



04-WTL-49-wet View of wetland along rail

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 10, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-49-upl
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): ballast slope Local relief (concave, convex, none): none Slope (%): 15%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.97455449 Long: -77.36321981 Datum: NAD-1983
 Soil Map Unit Name: Altavista fine sandy loam, 0 to 2 percent slopes, very rarely flooded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Upland adjacent to ballast, sloping down into wetland at culvert under rails. Field Sheet 12-B-WTL15-UP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-49-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Quercus rubra</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</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>0.00%</u> (A)
2 _____				
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
50% of total cover <u>5</u>		<u>10</u> = Total Cover		Prevalence Index worksheet 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>35</u> x 4 = <u>140</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>35</u> (A) <u>140</u> (B) Prevalence Index = B/A = <u>4.00</u> Hydrophytic Vegetation Indicators: <u> </u> 1 -Rapid Test for Hydrophytic Vegetation <u> </u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)
20% of total cover: <u>2</u>				
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				
1 <u>Quercus rubra</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
2 <u>Juniperus virginiana</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	
3 <u>Sassafras albidum</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
50% of total cover <u>10</u>		<u>20</u> = Total Cover		
20% of total cover: <u>4</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)				
1 <u>Solidago spp.</u>	<u>15</u>	<u>Y</u>		
2 <u>Rubus spp.</u>	<u>10</u>	<u>Y</u>		
3 <u>Lonicera spp.</u>	<u>10</u>	<u>Y</u>		
4 <u>Verbascum thapsus</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
5 _____				
6 _____				
7 _____				
8 _____				
9 _____				
10 _____				
11 _____				
12 _____				
50% of total cover <u>20</u>		<u>40</u> = Total Cover		
20% of total cover: <u>8</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)				
1 <u>none</u>				
2 _____				
3 _____				
4 _____				
5 _____				
50% of total cover <u>0</u>		<u>0</u> = Total Cover		
20% of total cover: <u>0</u>				

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation present? Yes No X

SOIL

Sampling Point: **04-WTL-49-upl**

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 ¹	Loc2		
0-12+	10YR	3 / 1					sand	coarse sand & coal cinders

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators 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 X

Remarks: **Soils dry in upland.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 10, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-50-wet
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.96799173 Long: -77.36303762 Datum: NAD-1983
 Soil Map Unit Name: Tomotley-Roanoke complex, 0 to 2 percent slopes, rarely flooded NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Surface water occurs in portions of wetland south of sampling point and ditch along railroad tracks. Field Sheet 12-B-WTL16-WET1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u>	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Bottomland hardwood (mostly) wetland.	

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-50-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>Acer rubrum</u>	<u>20</u>		<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)	
2 <u>Nyssa sylvatica</u>	<u>20</u>		<u>FAC</u>	Total Number of Dominant Species Across all Strata: <u>2</u> (B)	
3 <u>Pinus taeda</u>	<u>15</u>		<u>FAC</u>	Percent of Dominant Species that are OBL, FACW, or FAC: <u>50.00%</u> (A/B)	
4 _____					
5 _____					
6 _____					
7 _____					
8 _____					
55 = Total Cover					
50% of total cover <u>27.5</u>					
20% of total cover: <u>11</u>					
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				Prevalence Index worksheet	
1 <u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	Total % Cover of: Multiply by:	
2 _____				OBL species <u>0</u> x 1 = <u>0</u>	
3 _____				FACW species <u>0</u> x 2 = <u>0</u>	
4 _____				FAC species <u>65</u> x 3 = <u>195</u>	
5 _____				FACU species <u>0</u> x 4 = <u>0</u>	
6 _____				UPL species <u>0</u> x 5 = <u>0</u>	
7 _____				Column totals <u>65</u> (A) <u>195</u> (B)	
8 _____				Prevalence Index = B/A = <u>3.00</u>	
10 = Total Cover					
50% of total cover <u>5</u>					
20% of total cover: <u>2</u>					
Herb Stratum (Plot Size: <u>5' radius</u>)				Hydrophytic Vegetation Indicators:	
1 <u>Smilax spp.</u>	<u>10</u>	<u>Y</u>		<u> </u> 1 -Rapid Test for Hydrophytic Vegetation	
2 _____				<u> </u> 2 - Dominance Test is >50%	
3 _____				<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0	
4 _____				<u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)	
5 _____					
6 _____					
7 _____					
8 _____					
9 _____					
10 _____					
11 _____					
12 _____					
10 = Total Cover					
50% of total cover <u>5</u>					
20% of total cover: <u>2</u>					
Woody Vine Stratum (Plot Size: <u>30' radius</u>)				Definitions of Four Vegetation Strata:	
1 <u>none</u>				Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
2 _____				Sapling/shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
3 _____				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
4 _____				Woody vines - All woody vines greater than 3.28 ft in height.	
5 _____					
0 = Total Cover					
50% of total cover <u>0</u>					
20% of total cover: <u>0</u>					
				Hydrophytic vegetation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks: (If observed, list morphological adaptations below).					

SOIL

Sampling Point: **04-WTL-50-wet**

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 ¹	Loc2		
0-2	10YR 2 / 1	100					silt loam	
2-6	10YR 3 / 1	100					silt loam	
6-12+	10YR 4 / 1	90	7.5YR 5 / 8	10			silt loam	faint mottling

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-50-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.		
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.		
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.		
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.		
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.		
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.		

Total Score 0

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-50-wet View of wetland facing toward the railroad



04-WTL-50-wet View of wetland along railroad



04-WTL-50-wet View of wetland facing away from the railroad



04-WTL-50-wet View of wetland along railroad

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 10, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-50-upl
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 4%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.96816262 Long: -77.36298176 Datum: NAD-1983
 Soil Map Unit Name: Tarboro-Bojac complex, 0 to 6 percent slopes, very rarely flooded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Upland between south end of cornfield and railroad tracks. Field Sheet 12-B-WTL16-UP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-50-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Quercus phellos</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</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>57.14%</u> (A)
2 <u>Liquidambar styraciflua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	
3 <u>Pinus taeda</u>	<u>15</u>	<u>N</u>	<u>FAC</u>	
4 <u>Acer rubrum</u>	<u>15</u>	<u>N</u>	<u>FAC</u>	
5 _____				
6 _____				
7 _____				
8 _____				
80 = Total Cover 50% of total cover <u>40</u> 20% of total cover: <u>16</u>				Prevalence Index worksheet Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>30</u> x 2 = <u>60</u> FAC species <u>70</u> x 3 = <u>210</u> FACU species <u>25</u> x 4 = <u>100</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>125</u> (A) <u>370</u> (B)
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				
1 <u>Acer rubrum</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	
2 <u>Juniperus virginiana</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>	
3 <u>Quercus alba</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
35 = Total Cover 50% of total cover <u>17.5</u> 20% of total cover: <u>7</u>				Prevalence Index = B/A = <u>2.96</u> Hydrophytic Vegetation Indicators: ___ 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 ___ Problematic Hydrophytic Vegetation ¹ (Explain)
Herb Stratum (Plot Size: <u>5' radius</u>)				
1 <u>Smilax spp.</u>	<u>5</u>	<u>Y</u>		
2 <u>Lonicera japonica</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
9 _____				
10 _____				
11 _____				
12 _____				
10 = Total Cover 50% of total cover <u>5</u> 20% of total cover: <u>2</u>				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 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 vines - All woody vines greater than 3.28 ft in height.
Woody Vine Stratum (Plot Size: <u>30' radius</u>)				
1 <u>Campsis radicans</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
2 _____				
3 _____				
4 _____				
5 _____				
5 = Total Cover 50% of total cover <u>2.5</u> 20% of total cover: <u>1</u>				

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: **04-WTL-50-upl**

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 ¹	Loc ²		
0-2	10YR 3 / 2	100					loam	lots of organics
2-12+	10YR 4 / 2	100					sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators 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 **X**

Remarks: **Soils similar in color to adjacent wetland area, yet are not saturated for at least the upper 12 inches.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 10, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-51-wet
 Investigator(s): D. Mitchell, R. Mangum Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): RR ditch Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.95801901 Long: -77.36831533 Datum: NAD-1983
 Soil Map Unit Name: Tarboro-Bojac complex, 0 to 6 percent slopes, very rarely flooded NWI classification: PEM
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is a small railroad ditch wetland that drains into Culvert 4 and under railroad track. Field Sheet 12-B-WTL17-WET1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) ___ Aquatic Fauna (B13) ___ High Water Table (A2) ___ Marl Deposits (B15) (LRR U) ___ Saturation (A3) ___ Hydrogen Sulfide Odor (C1) ___ Water Marks (B1) ___ Oxidized Rhizospheres on Living Roots (C3) ___ Sediment Deposits (B2) ___ Presence of Reduced Iron (C4) ___ Drift Deposits (B3) ___ Recent Iron Reduction in Tilled Soils (C6) ___ Algal Mat or Crust (B4) ___ Thin Muck Surface (C7) ___ Iron Deposits (B5) ___ Other (Explain in Remarks) ___ Inundation Visible on Aerial Imagery (B7) ___ Water-Stained Leaves (B9)	___ 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) ___ Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ FAC-Neutral Test (D5) ___ Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u><2 inches</u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	---

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

Remarks: **Railroad ditch and wetland drains into Culvert 4 and under railroad track. Iron oxidizing bacteria present (orange color).**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-51-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				
2				
3				
4				
5				
6				
7				
8				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				
1 <u>none</u>				
2				
3				
4				
5				
6				
7				
8				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)				
1 <u>Carex spp.</u>	<u>20</u>	<u>Y</u>		
2 <u>Juncus effusus</u>	<u>20</u>	<u>Y</u>	<u>OBL</u>	
3 <u>Polygonum spp.</u>	<u>20</u>	<u>Y</u>		
4 <u>Eupatorium perfoliatum</u>	<u>15</u>	<u>Y</u>	<u>FACW</u>	
5				
6				
7				
8				
9				
10				
11				
12				
50% of total cover <u>37.5</u> 20% of total cover: <u>15</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)				
1 <u>none</u>				
2				
3				
4				
5				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: _____ (B)

Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column totals _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No _____

Remarks: (If observed, list morphological adaptations below).

Smartweed coming down from adjacent upland slope.

SOIL

Sampling Point: **04-WTL-51-wet**

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 ¹	Loc ²		
0-12+	10YR	2 / 1					sandy clay	muck and coal cinders

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input checked="" type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-51-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	0	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 3

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-51-wet Culvert 04, concrete 30"



04-WTL-51-wet View of wetland along railroad

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-51-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)	
2 <u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	Total Number of Dominant Species Across all Strata: <u>6</u> (B)	
3 <u>Fraxinus spp.</u>	<u>10</u>	<u>Y</u>		Percent of Dominant Species that are OBL, FACW, or FAC: <u>33.33%</u> (A)	
4 _____				Prevalence Index worksheet	
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>	
8 _____				FAC species <u>20</u> x 3 = <u>60</u>	
	<u>30</u> = Total Cover			FACU species <u>20</u> x 4 = <u>80</u>	
	50% of total cover <u>15</u>	20% of total cover: <u>6</u>		UPL species <u>0</u> x 5 = <u>0</u>	
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				Column totals <u>40</u> (A) <u>140</u> (B)	
1 <u>Alanthus altissima</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	Prevalence Index = B/A = <u>3.50</u>	
2 _____				Hydrophytic Vegetation Indicators:	
3 _____				<u>1</u> -Rapid Test for Hydrophytic Vegetation	
4 _____				<u>2</u> - Dominance Test is >50%	
5 _____				<u>3</u> - Prevalence Index is ≤3.0	
6 _____				<u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)	
7 _____					
8 _____					
	<u>5</u> = Total Cover			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
	50% of total cover <u>2.5</u>	20% of total cover: <u>1</u>		Definitions of Four Vegetation Strata:	
Herb Stratum (Plot Size: <u>5' radius</u>)				Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
1 <u>Festuca arundinaceus</u>	<u>20</u>	<u>Y</u>		Sapling/shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
2 <u>Alopecurus spp.</u>	<u>10</u>	<u>Y</u>		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
3 <u>Lonicera japonica</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	Woody vines - All woody vines greater than 3.28 ft in height.	
4 <u>Phytolacca americana</u>	<u>5</u>	<u>N</u>	<u>FACU</u>		
5 <u>Verbascum thapsus</u>	<u>5</u>	<u>N</u>	<u>FACU</u>		
6 _____					
7 _____					
8 _____					
9 _____					
10 _____					
11 _____					
12 _____					
	<u>45</u> = Total Cover			Hydrophytic vegetation present? Yes _____ No <u>X</u>	
	50% of total cover <u>22.5</u>	20% of total cover: <u>9</u>			
Woody Vine Stratum (Plot Size: <u>30' radius</u>)					
1 <u>none</u>					
2 _____					
3 _____					
4 _____					
5 _____					
	<u>0</u> = Total Cover				
	50% of total cover <u>0</u>	20% of total cover: <u>0</u>			

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: **04-WTL-51-upl**

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 ¹	Loc2		
0-3	10YR 3 / 2	100					loam	organics
3-12+	10YR 4 / 1	100					sandy loam	coarse sandy loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 17, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-52-wet
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): RR ditch Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.957207 Long: -77.372409 Datum: NAD-1983
 Soil Map Unit Name: State fine sandy loam, 0 to 2 percent slopes, very rarely flooded NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Wetland is a ditch along north side of railroad. It is separated from wetland 3 by a raised fill area that is populated by cedar trees. Field Sheet 12-A-WTL-04, wetDP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	<u> </u> Surface Soil Cracks (B6)
<u>X</u> Surface Water (A1)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> High Water Table (A2)	<u> </u> Drainage Patterns (B10)
<u>X</u> Saturation (A3)	<u> </u> Moss Trim Lines (B16)
<u> </u> Water Marks (B1)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Sediment Deposits (B2)	<u>X</u> Crayfish Burrows (C8)
<u> </u> Drift Deposits (B3)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Geomorphic Position (D2)
<u> </u> Iron Deposits (B5)	<u> </u> Shallow Aquitard (D3)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Water-Stained Leaves (B9)	<u> </u> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u><6 inches</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	--

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

Remarks: **Surface water and saturation throughout. Fresh crayfish burrows present. Likely a groundwater connection is present from hillside to the north. Raised area at west end probably contributes to ponding in the railroad ditch.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-52-wet**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Carex lupulina	20	Y	OBL
2	Carex frankii	20	Y	OBL
3	Scirpus spp.	10	Y	
4				
5				
6				
7				
8				
9				
10				
11				
12				

50 = Total Cover
 50% of total cover: **25** 20% of total cover: **10**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)
 Total Number of Dominant Species Across all Strata: _____ (B)
 Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet
 Total % Cover of: _____ Multiply by: _____
 OBL species _____ x 1 = _____
 FACW species _____ x 2 = _____
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column totals _____ (A) _____ (B)
 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
X 1 -Rapid Test for Hydrophytic Vegetation
 _____ 2 - Dominance Test is >50%
 _____ 3 - Prevalence Index is ≤3.0¹
 _____ Problematic Hydrophytic Vegetation¹ (Explain)

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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes **X** No _____

Remarks: (If observed, list morphological adaptations below).
20% open water. Filamentous algae also present in water.

SOIL

Sampling Point: 04-WTL-52-wet

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 ¹	Loc ²		
0-12+	10YR	5 / 1	75	10YR	5 / 8	25		sandy clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **Soils were saturated throughout the core.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 17, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 04-WTL-52-upl
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 40
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.957247 Long: -77.372428 Datum: NAD-1983
 Soil Map Unit Name: Slagle-Kempsville complex, 2 to 15 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Upland data point taken north of WTL-04 on hillslope up to field road. Soils were moderately to well drained. Upland animal burrows were present in hillside. Field Sheet 12-A-WTL-04, upDP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
--	--

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

Remarks: **Upland animal burrows present. Soils are moderately to well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-52-upl**

Tree Stratum (Plot Size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1 Quercus phellos	20	Y	FACW
2 Liquidambar styraciflua	20	Y	FAC
3			
4			
5			
6			
7			
8			

40 = Total Cover
 50% of total cover: **20** 20% of total cover: **8**

Sapling/Shrub Stratum (Plot Size: 15' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1 Juniperus virginiana	5	Y	FACU
2			
3			
4			
5			
6			
7			
8			

5 = Total Cover
 50% of total cover: **2.5** 20% of total cover: **1**

Herb Stratum (Plot Size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1 Phytolacca americana	5	Y	FACU
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

5 = Total Cover
 50% of total cover: **2.5** 20% of total cover: **1**

Woody Vine Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 Lonicera japonica	20	Y	FACU
2 Rubus spp.	15	Y	
3			
4			
5			

35 = Total Cover
 50% of total cover: **17.5** 20% of total cover: **7**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **2** (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: **33.33%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 20	x 2 = 40
FAC species 20	x 3 = 60
FACU species 30	x 4 = 120
UPL species 0	x 5 = 0
Column totals 70 (A)	220 (B)

Prevalence Index = B/A = **3.14**

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No **X**

Remarks: (If observed, list morphological adaptations below).
Herb layer nearly absent.

SOIL

Sampling Point: 04-WTL-52-upl

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 ¹	Loc ²		
0-12+	10YR	5 / 6	75	10YR	6 / 1	25		sandy clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric soil present? Yes _____ No X

Remarks: **Soils appear to be disturbed from the railroad cut and past erosion.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 16, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-53-wet
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.956982 Long: -77.375581 Datum: NAD-1983
 Soil Map Unit Name: Tomotley-Roanoke complex, 0 to 2 percent slopes, rarely flooded NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Wetland data point taken within railroad ditch seep. Wetland continues into wooded area northwest of ditch. Soils are saturated. Japanese stiltgrass is dominant species. Area in the woods is a wooded depression. Field Sheet 12-A-WTL-03 RRDitchSeep, wetDP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u>X</u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	--

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

Remarks: **Soils are saturated. Depression ponds water in the center. Old building collapsed in depression, probably pushed in from the east where there are several dilapidated buildings.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-53-wet**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Liquidambar styraciflua	80	Y	
2	Pinus taeda	45	Y	FAC
3	Platanus occidentalis	5	N	FACW
4				
5				
6				
7				
8				

130 = Total Cover
 50% of total cover: **65** 20% of total cover: **26**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Platanus occidentalis	20	Y	FACW
2				
3				
4				
5				
6				
7				
8				

20 = Total Cover
 50% of total cover: **10** 20% of total cover: **4**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Microstegium vimineum	80	Y	FAC
2	Murdannia keisak	20	N	OBL
3	Polygonum pensylvanicum	20	N	
4	Lonicera japonica	15	N	FACU
5				
6				
7				
8				
9				
10				
11				
12				

135 = Total Cover
 50% of total cover: **67.5** 20% of total cover: **27**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **3** (A)

Total Number of Dominant Species Across all Strata: **4** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **75.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 20	x 1 = 20
FACW species 25	x 2 = 50
FAC species 125	x 3 = 375
FACU species 15	x 4 = 60
UPL species 0	x 5 = 0
Column totals 185 (A)	505 (B)

Prevalence Index = B/A = **2.73**

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 04-WTL-53-wet

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 ¹	Loc ²		
0-8	10YR	3 / 1	100					silt loam	
8-12+	10YR	6 / 2	95	10YR 5 / 8	5			sandy clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **Soils range from very moist to saturated. Possible groundwater seepage from adjacent uplands and railroad ditch.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-53-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 4

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-53-wet View of forested depressional wetland.



04-WTL-53-wet View of forested depressional wetland.



04-WTL-53-wet Debris in wetland.



04-WTL-53-wet View of railroad ditch portion of wetland - looking west.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 16, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 04-WTL-53-upl
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 15
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.95724 Long: -77.375432 Datum: NAD-1983
 Soil Map Unit Name: Tomotley-Roanoke complex, 0 to 2 percent slopes, rarely flooded NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil X, or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u> </u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Upland data point taken north of railroad ditch within wooded area. Soils are well drained. Soils have been influenced by railroad and old access road activities. Field Sheet 12-A-WTL-03, upDP1.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
--	--

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

Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-53-upl**

Tree Stratum	(Plot Size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Liriodendron tulipifera	75	Y	FACU
2	Liquidambar styraciflua	50	Y	FAC
3	Platanus occidentalis	40	Y	FACW
4				
5				
6				
7				
8				

165 = Total Cover
 50% of total cover: **82.5** 20% of total cover: **33**

Sapling/Shrub Stratum	(Plot Size: 15' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Lonicera americana	10	Y	
2				
3				
4				
5				
6				
7				
8				

10 = Total Cover
 50% of total cover: **5** 20% of total cover: **2**

Herb Stratum	(Plot Size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Microstegium vimineum	40	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

40 = Total Cover
 50% of total cover: **20** 20% of total cover: **8**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Toxicodendron radicans	5	Y	FAC
2				
3				
4				
5				

5 = Total Cover
 50% of total cover: **2.5** 20% of total cover: **1**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **4** (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: **66.67%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 40	x 2 = 80
FAC species 95	x 3 = 285
FACU species 75	x 4 = 300
UPL species 0	x 5 = 0
Column totals 210 (A)	665 (B)

Prevalence Index = B/A = **3.17**

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 04-WTL-53-upl

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 ¹	Loc2		
0-12+	10YR	3 / 1	100				silt loam	coal-like

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	(MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators 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 X

Remarks: **Soils have been influenced by railroad activities and access road activities. Coal-like soil.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 16, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 04-WTL-54-wet
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression/pond Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.9569 Long: -77.378428 Datum: NAD-1983
 Soil Map Unit Name: Bojac sandy loam, 0 to 6 percent slopes, very rarely flooded NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Wetland data point taken within fringe along west side of pond. Fence through pond is evidence that pond dries out. Field Sheet 12AWTL2 Pond, wetDP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	<u> </u> Surface Soil Cracks (B6)
<u>X</u> Surface Water (A1)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Aquatic Fauna (B13)	<u> </u> Drainage Patterns (B10)
<u>X</u> High Water Table (A2)	<u> </u> Moss Trim Lines (B16)
<u> </u> Marl Deposits (B15) (LRR U)	<u> </u> Dry-Season Water Table (C2)
<u>X</u> Saturation (A3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Hydrogen Sulfide Odor (C1)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Water Marks (B1)	<u> </u> Geomorphic Position (D2)
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	<u> </u> Shallow Aquitard (D3)
<u> </u> Sediment Deposits (B2)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Presence of Reduced Iron (C4)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Drift Deposits (B3)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Algal Mat or Crust (B4)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Iron Deposits (B5)	
<u> </u> Other (Explain in Remarks)	
<u>X</u> Inundation Visible on Aerial Imagery (B7)	
<u> </u> Water-Stained Leaves (B9)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>< 18 inches</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	--

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

Remarks: **Surface water present and can be seen on aerial. Wetland is a ponded area.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-54-wet**

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 Betula nigra	40	Y	FACW
2 Pinus taeda	20	Y	FAC
3 _____	_____	_____	_____
4 _____	_____	_____	_____
5 _____	_____	_____	_____
6 _____	_____	_____	_____
7 _____	_____	_____	_____
8 _____	_____	_____	_____

60 = Total Cover
 50% of total cover: **30** 20% of total cover: **12**

Sapling/Shrub Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 none	_____	_____	_____
2 _____	_____	_____	_____
3 _____	_____	_____	_____
4 _____	_____	_____	_____
5 _____	_____	_____	_____
6 _____	_____	_____	_____
7 _____	_____	_____	_____
8 _____	_____	_____	_____

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Herb Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 Microstegium vimineum	40	Y	FAC
2 Leersia oryzoides	20	Y	OBL
3 Carex frankii	10	N	OBL
4 Aster spp.	10	N	_____
5 Murdannia keisak	5	N	OBL
6 _____	_____	_____	_____
7 _____	_____	_____	_____
8 _____	_____	_____	_____
9 _____	_____	_____	_____
10 _____	_____	_____	_____
11 _____	_____	_____	_____
12 _____	_____	_____	_____

85 = Total Cover
 50% of total cover: **42.5** 20% of total cover: **17**

Woody Vine Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 none	_____	_____	_____
2 _____	_____	_____	_____
3 _____	_____	_____	_____
4 _____	_____	_____	_____
5 _____	_____	_____	_____

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **4** (A)

Total Number of Dominant Species Across all Strata: **4** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **100.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 35	x 1 = 35
FACW species 40	x 2 = 80
FAC species 60	x 3 = 180
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column totals 135 (A)	295 (B)

Prevalence Index = B/A = **2.19**

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).
The loblolly pine is rooted in the upland. Pond is populated with aquatic macrophytes and yellow lilly. Buttonbush around pond margins (not in data plot).

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 ¹	Loc2		
0-12	10YR	3 / 1	100				sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input checked="" type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **Soils likely influenced by coal dust from railroad activities.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-54-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	3	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	2	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 12

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-54-wet View of pond from railroad ROW



04-WTL-54-wet Western boundary of pond



04-WTL-54-wet Wetland view southeast toward pond



04-WTL-54-wet View of wetland western boundary



04-WTL-54-wet View west toward wetland beaver pond



04-WTL-54-wet View of upland area

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 16, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 04-WTL-54-upl
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): ballast slope Local relief (concave, convex, none): none Slope (%): 10
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.957031 Long: -77.378469 Datum: NAD-1983
 Soil Map Unit Name: Bojac sandy loam, 0 to 6 percent slopes, very rarely flooded NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil X, or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland?	Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u>X</u> No <u> </u>		
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>		

Remarks: **Upland data point taken on west side of WTL-02 (pond). Soils are well drained and have been influenced by railroad activities. Soils are coal-like and gritty. Data point on hillslope adjacent to old access road. Field Sheet 12-A-WTL-02 (pond), upDP1.**

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	<u> </u> Surface Soil Cracks (B6)
<u> </u> Surface Water (A1)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> High Water Table (A2)	<u> </u> Drainage Patterns (B10)
<u> </u> Saturation (A3)	<u> </u> Moss Trim Lines (B16)
<u> </u> Water Marks (B1)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Sediment Deposits (B2)	<u> </u> Crayfish Burrows (C8)
<u> </u> Drift Deposits (B3)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Geomorphic Position (D2)
<u> </u> Iron Deposits (B5)	<u> </u> Shallow Aquitard (D3)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Water-Stained Leaves (B9)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Aquatic Fauna (B13)	
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations:	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	

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

Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-54-upl**

Tree Stratum (Plot Size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1 Liquidambar styraciflua	40	Y	FAC
2 Betula nigra	35	Y	FACW
3 Pinus taeda	30	Y	FAC
4 Quercus falcata	10	N	FACU
5 Quercus alba	5	N	FACU
6			
7			
8			

120 = Total Cover
 50% of total cover: **60** 20% of total cover: **24**

Sapling/Shrub Stratum (Plot Size: 15' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1 Juniperus virginiana	5	Y	FACU
2 Pinus taeda	1	N	FAC
3			
4			
5			
6			
7			
8			

6 = Total Cover
 50% of total cover: **3** 20% of total cover: **1.2**

Herb Stratum (Plot Size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1 Lonicera japonica	15	Y	FACU
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

15 = Total Cover
 50% of total cover: **7.5** 20% of total cover: **3**

Woody Vine Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 none			
2			
3			
4			
5			

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **3** (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: **60.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 35	x 2 = 70
FAC species 71	x 3 = 213
FACU species 35	x 4 = 140
UPL species 0	x 5 = 0
Column totals 141	(A) 423 (B)

Prevalence Index = B/A = **3.00**

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 04-WTL-54-upl

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 ¹	Loc2		
0-12+	2.5Y 2.5 / 1	100					sand	gritty

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks: **Soils have been influenced by railroad activities and old access road.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 16, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-55-wet
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.956334 Long: -77.386308 Datum: NAD-1983
 Soil Map Unit Name: Bibb-Chastain complex, 0 to 2 percent slopes, frequently flooded NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Wetland in the floodplain of Polecat Creek. Surface water present throughout majority of wetland. Field Sheet 12-A-WTL-01, wetDP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	<u> </u> Surface Soil Cracks (B6)
<u>X</u> Surface Water (A1)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> High Water Table (A2)	<u> </u> Drainage Patterns (B10)
<u>X</u> Saturation (A3)	<u> </u> Moss Trim Lines (B16)
<u> </u> Water Marks (B1)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Sediment Deposits (B2)	<u> </u> Crayfish Burrows (C8)
<u> </u> Drift Deposits (B3)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Geomorphic Position (D2)
<u> </u> Iron Deposits (B5)	<u> </u> Shallow Aquitard (D3)
<u>X</u> Inundation Visible on Aerial Imagery (B7)	<u> </u> FAC-Neutral Test (D5)
<u>X</u> Water-Stained Leaves (B9)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Aquatic Fauna (B13)	
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u>X</u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u><3 inches</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? (includes capillary fringe) Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u>	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	--

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

Remarks: **Surface water present throughout majority of wetland. Soil is saturated and a high water table is present.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-55-wet**

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 Betula nigra	50	Y	FACW
2 Liquidambar styraciflua	50	Y	FAC
3 Acer rubrum	30	Y	FAC
4 Quercus phellos	15	N	FACW
5			
6			
7			
8			

145 = Total Cover
 50% of total cover: **72.5** 20% of total cover: **29**

Sapling/Shrub Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 Acer rubrum	25	Y	FAC
2 Betula nigra	25	Y	FACW
3			
4			
5			
6			
7			
8			

50 = Total Cover
 50% of total cover: **25** 20% of total cover: **10**

Herb Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 Carex lurida	40	Y	OBL
2 Smilax spp.	25	Y	
3 Carex spp.	15	N	
4			
5			
6			
7			
8			
9			
10			
11			
12			

80 = Total Cover
 50% of total cover: **40** 20% of total cover: **16**

Woody Vine Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 none			
2			
3			
4			
5			

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: **7** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **85.71%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 40	x 1 = 40
FACW species 90	x 2 = 180
FAC species 105	x 3 = 315
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column totals 235 (A)	535 (B)

Prevalence Index = B/A = **2.28**

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 04-WTL-55-wet

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 ¹	Loc ²		
0-12+	10YR	5 / 1	95	10YR	5 / 6	5		clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

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

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric soil present? Yes X No _____

Remarks:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-55-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	3	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	3	

Total Score 11

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-55-wet View of wetland



04-WTL-55-wet View of wetland facing east



04-WTL-55-wet Possible buried culvert



04-WTL-55-wet Ephemeral channel flowing out of study limits



04-WTL-55-wet View upstream (NE) of ephemeral channel that flows out of study area



04-WTL-55-wet View of wetland

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 16, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 04-WTL-55-upl
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 15
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.9565 Long: -77.383799 Datum: NAD-1983
 Soil Map Unit Name: Tomotley-Roanoke complex, 0 to 2 percent slopes, rarely flooded NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland?	Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>		
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>		

Remarks: **Upland data point taken on east side of WTL-01 (east of Polecat Creek). Data point taken on ridge/hill of an old access road. Soils are sandy and moderately to well drained. American holly, eastern cedar, loblolly pine, and tulip poplar are dominant species. Field Sheet 12-A-WTL-01 upDP1.**

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
	<u> </u> Sphagnum moss (D8) (LRR T, U)

Field Observations:	
Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	

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

Remarks: **Soils are moderately to well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-55-upl**

Tree Stratum	(Plot Size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Liriodendron tulipifera	80	Y	FACU
2	Pinus taeda	70	Y	FAC
3	Quercus falcata	15	N	FACU
4	Juniperus virginiana	5	N	FACU
5				
6				
7				
8				

170 = Total Cover
 50% of total cover: **85** 20% of total cover: **34**

Sapling/Shrub Stratum	(Plot Size: 15' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Juniperus virginiana	50	Y	FACU
2	Ilex opaca	30	Y	FAC
3				
4				
5				
6				
7				
8				

80 = Total Cover
 50% of total cover: **40** 20% of total cover: **16**

Herb Stratum	(Plot Size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Lonicera japonica	20	Y	FACU
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

20 = Total Cover
 50% of total cover: **10** 20% of total cover: **4**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **2** (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: **40.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 100	x 3 = 300
FACU species 170	x 4 = 680
UPL species 0	x 5 = 0
Column totals 270 (A)	980 (B)

Prevalence Index = B/A = **3.63**

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No **X**

Remarks: (If observed, list morphological adaptations below).
Very deep leaf/pine needle litter. Herb layer nearly absent.

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 ¹	Loc2		
0-12+	2.5Y	6 / 4	100				sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	(MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators 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 X

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 16, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-56-wet
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.956334 Long: -77.386308 Datum: NAD-1983
 Soil Map Unit Name: Bibb-Chastain complex, 0 to 2 percent slopes, frequently flooded NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Wetland in the floodplain of Polecat Creek. Surface water present throughout majority of wetland. Field Sheet 12-A-WTL-01, wetDP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u>X</u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u>X</u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u>X</u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u>X</u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u>X</u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u><3 inches</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? (includes capillary fringe) Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u>	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	---

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

Remarks: **Surface water present throughout majority of wetland. Soil is saturated and a high water table is present.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-56-wet**

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 Betula nigra	50	Y	FACW
2 Liquidambar styraciflua	50	Y	FAC
3 Acer rubrum	30	Y	FAC
4 Quercus phellos	15	N	FACW
5			
6			
7			
8			

145 = Total Cover
 50% of total cover: **72.5** 20% of total cover: **29**

Sapling/Shrub Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 Acer rubrum	25	Y	FAC
2 Betula nigra	25	Y	FACW
3			
4			
5			
6			
7			
8			

50 = Total Cover
 50% of total cover: **25** 20% of total cover: **10**

Herb Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 Carex lurida	40	Y	OBL
2 Smilax spp.	25	Y	
3 Carex spp.	15	N	
4			
5			
6			
7			
8			
9			
10			
11			
12			

80 = Total Cover
 50% of total cover: **40** 20% of total cover: **16**

Woody Vine Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 none			
2			
3			
4			
5			

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: **7** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **85.71%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 40	x 1 = 40
FACW species 90	x 2 = 180
FAC species 105	x 3 = 315
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column totals 235 (A)	535 (B)

Prevalence Index = B/A = **2.28**

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 04-WTL-56-wet

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 ¹	Loc ²		
0-12+	10YR	5 / 1	95	10YR	5 / 6	5		clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-56-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	3	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	3	

Total Score 11

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-56-wet View of wetland



04-WTL-56-wet View of wetland facing east



04-WTL-56-wet Possible buried culvert



04-WTL-56-wet Ephemeral channel flowing out of study limits



04-WTL-56-wet View upstream (NE) of ephemeral channel that flows out of study area



04-WTL-56-wet View of wetland

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-56-upl**

Tree Stratum	(Plot Size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Liriodendron tulipifera	80	Y	FACU
2	Pinus taeda	70	Y	FAC
3	Quercus falcata	15	N	FACU
4	Juniperus virginiana	5	N	FACU
5				
6				
7				
8				

170 = Total Cover
 50% of total cover: **85** 20% of total cover: **34**

Sapling/Shrub Stratum	(Plot Size: 15' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Juniperus virginiana	50	Y	FACU
2	Ilex opaca	30	Y	FAC
3				
4				
5				
6				
7				
8				

80 = Total Cover
 50% of total cover: **40** 20% of total cover: **16**

Herb Stratum	(Plot Size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Lonicera japonica	20	Y	FACU
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

20 = Total Cover
 50% of total cover: **10** 20% of total cover: **4**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **2** (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: **40.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 100	x 3 = 300
FACU species 170	x 4 = 680
UPL species 0	x 5 = 0
Column totals 270 (A)	980 (B)

Prevalence Index = B/A = **3.63**

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No **X**

Remarks: (If observed, list morphological adaptations below).
Very deep leaf/pine needle litter. Herb layer nearly absent.

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 ¹	Loc2		
0-12+	2.5Y	6 / 4	100				sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 15, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 04-WTL-57-wet-1
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.9558 Long: -77.39254 Datum: NAD-1983
 Soil Map Unit Name: Chastain silt loam, 0 to 2 percent slopes, ponded NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Wetland is part of Polecat Creek floodplain. Channels are braided throughout wetland. Field Sheet 12-A-WTL-02 wetDP2.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u>X</u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u>X</u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u>X</u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u>X</u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u><12 inches</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Surface water is present throughout wetland. Soils are saturated.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-57-wet-1**

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 Pinus taeda	45	Y	FAC
2 Liquidambar styraciflua	10	N	FAC
3 Diospyros soo.	5	N	
4			
5			
6			
7			
8			

60 = Total Cover
 50% of total cover: **30** 20% of total cover: **12**

Sapling/Shrub Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 Betula nigra	40	Y	FACW
2 Acer rubrum	40	Y	FAC
3			
4			
5			
6			
7			
8			

80 = Total Cover
 50% of total cover: **40** 20% of total cover: **16**

Herb Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 Murdannia keisak	70	Y	OBL
2 Polygonum hydropiper	30	Y	OBL
3 Polygonum sagittatum	30	Y	OBL
4 Microstegium vimineum	20	N	FAC
5			
6			
7			
8			
9			
10			
11			
12			

150 = Total Cover
 50% of total cover: **75** 20% of total cover: **30**

Woody Vine Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 none			
2			
3			
4			
5			

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

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)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 130	x 1 = 130
FACW species 40	x 2 = 80
FAC species 115	x 3 = 345
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column totals 285 (A)	555 (B)

Prevalence Index = B/A = **1.95**

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).

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 ¹	Loc ²		
0-12+	10YR	4 / 1	100				sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

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

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric soil present? Yes X No _____

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 15, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 04-WTL-57-upl-1
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 45
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.955563 Long: -77.392526 Datum: NAD-1983
 Soil Map Unit Name: Chastain silt loam, 0 to 2 percent slopes, ponded NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil X, or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Upland data point taken on slope of ballast. Soils are well drained and have been influenced by railroad activities. Soils are coal-like. Very little vegetation is present. Field Sheet 12-A-WTL-02 upDP2.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
--	--

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

Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-57-upl-1**

Tree Stratum	(Plot Size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: 15' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Tridens flavus	45	Y	FACU
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

45 = Total Cover
 50% of total cover: **22.5** 20% of total cover: **9**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across all Strata: **1** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **0.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 0	x 3 = 0
FACU species 45	x 4 = 180
UPL species 0	x 5 = 0
Column totals 45 (A)	180 (B)

Prevalence Index = B/A = **4.00**

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No **X**

Remarks: (If observed, list morphological adaptations below).
Very little vegetation on slope of ballast. Wetland abuts the toe of ballast.

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 ¹	Loc2		
0-12+	2.5Y 2.5 / 1	100					sand	gritty, coal-like

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks: **Soils have been influenced by railroad activities. Soil is coal-like and gritty.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 15, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 04-WTL-57-wet-2
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): rr ditch Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.955493 Long: -77.397738 Datum: NAD-1983
 Soil Map Unit Name: Bojac sandy loam, 0 to 6 percent slopes, very rarely flooded NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is a railroad ditch wetland dominated by woolgrass and soft rush. Water is likely from adjacent hillside seepage. Field Sheet 12A-WTL-03 RR Ditch, wetDP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u>X</u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>6</u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	---

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

Remarks: **Water depth varies from saturation to 6 inches.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-57-wet-2**

Tree Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Scirpus cyperinus	60	Y	OBL
2	Juncus effusus	40	Y	OBL
3	Eleocharis spp.	10	N	
4				
5				
6				
7				
8				
9				
10				
11				
12				

110 = Total Cover

50% of total cover: **55** 20% of total cover: **22**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: _____ (B)

Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column totals _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).

20% open water in ditch. Could not ID spike rush to species because it had gone dormant.

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 ¹	Loc ²		
0-4	10YR 3 / 1	100					sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	(MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **Soils depleted/reduced. Some of the coal dust appears to be present.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-57-wet-2

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	0	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	0	

Total Score 2

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-57-wet-2 Railroad ditch view west



04-WTL-57-wet-2 Railroad ditch view east



04-WTL-57-wet-2 Railroad ditch wetland view east.



04-WTL-57-wet-2 Railroad ditch wetland view west.



04-WTL-57-wet-2 Railroad ditch wetland view east.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 15, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 04-WTL-57-upl-2
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 20
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.955373 Long: -77.397705 Datum: NAD-1983
 Soil Map Unit Name: State fine sandy loam, 2 to 6 percent slopes, very rarely flooded NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: This is the upland point near rr ditch wetland 3. Field Sheet 12AWTL3 RR Ditch, upDP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
--	--

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

Remarks: **Area is sloping and well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-57-upl-2**

Tree Stratum	(Plot Size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Pinus taeda	80	Y	FAC
2	Pinus virginiana	10	N	
3				
4				
5				
6				
7				
8				

90 = Total Cover
 50% of total cover: **45** 20% of total cover: **18**

Sapling/Shrub Stratum	(Plot Size: 15' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **1** (A)

Total Number of Dominant Species Across all Strata: **1** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **100.00%** (A/B)

Prevalence Index worksheet

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> 0 </u>	x 4 = <u> 0 </u>
UPL species <u> 0 </u>	x 5 = <u> 0 </u>
Column totals <u> 80 </u> (A)	<u> 240 </u> (B)

Prevalence Index = B/A = **3.00**

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).
Herb layer absent - dense layer of pine needles.

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 ¹	Loc2		
0-6	10YR	5 / 4	100					sandy loam	
6-12	10YR	5 / 4	90	10YR	3 / 2	10		sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks: **Soils are well drained.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 15, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 04-WTL-57-wet-3
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.95622 Long: -77.388105 Datum: NAD-1983
 Soil Map Unit Name: Bibb-Chastain complex, 0 to 2 percent slopes, frequently flooded NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Polecat Creek is braided throughout this wetland. Field Sheet 12-A-WTL-02 wetDP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u>X</u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u>X</u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u>X</u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Wetland is part of Polecat Creek floodplain. Polecat Creek is braided throughout wetland. Soils were saturated.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-57-wet-3**

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Betula nigra</u>	<u>70</u>	<u>Y</u>	<u>FACW</u>
2 <u>Acer rubrum</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>
3 <u>Quercus bicolor</u>	<u>20</u>	<u>N</u>	<u>FACW</u>
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			

130 = Total Cover
 50% of total cover: 65 20% of total cover: 26

Sapling/Shrub Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Betula nigra</u>	<u>40</u>	<u>Y</u>	<u>FACW</u>
2 <u>Acer rubrum</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			

80 = Total Cover
 50% of total cover: 40 20% of total cover: 16

Herb Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Sphagnum affine</u>	<u>15</u>	<u>Y</u>	
2 <u>Carex spp.</u>	<u>5</u>	<u>Y</u>	
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			
9 _____			
10 _____			
11 _____			
12 _____			

20 = Total Cover
 50% of total cover: 10 20% of total cover: 4

Woody Vine Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>none</u>			
2 _____			
3 _____			
4 _____			
5 _____			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>130</u>	x 2 = <u>260</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>210</u> (A)	<u>500</u> (B)

Prevalence Index = B/A = 2.38

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).
Herb layer nearly absent at data point.

SOIL

Sampling Point: 04-WTL-57-wet-3

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 ¹	Loc ²		
0-4	10YR 4 / 1		95	10YR 4 / 6	5			clay loam	
4-12+	10YR 6 / 1		90	10YR 5 / 8	10			silty clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	(MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

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

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric soil present? Yes X No _____

Remarks:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-57-wet-3

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	4	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	2	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	3	

Total Score 13

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-57-wet-3 View of eastern central portion of wetland



04-WTL-57-wet-3 View of wetland



04-WTL-57-wet-3 View of wetland



04-WTL-57-wet-3 View of buttressed trunks



04-WTL-57-wet-3 View of east end of wetland



04-WTL-57-wet-3 View of upland

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 15, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-57-upl-3
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): ballast slope Local relief (concave, convex, none): none Slope (%): 45
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.956045 Long: -77.388298 Datum: NAD-1983
 Soil Map Unit Name: Chastain silt loam, 0 to 2 percent slopes, ponded NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil X, or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	
Remarks: Upland data point located on slope of ballast. American holly is dominant species. Field Sheet 12-A-WTL-02 upDP1.		

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input 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"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<input type="checkbox"/> Marl Deposits (B15) (LRR U)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Soils are well drained. Soils have been influenced by railroad activities (coal-like).	

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-57-upl-3**

Tree Stratum	(Plot Size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Ilex opaca	100	Y	FAC
2				
3				
4				
5				
6				
7				
8				

100 = Total Cover
 50% of total cover: **50** 20% of total cover: **20**

Sapling/Shrub Stratum	(Plot Size: 15' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Setaria faberi	20	Y	UPL
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

20 = Total Cover
 50% of total cover: **10** 20% of total cover: **4**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **1** (A)

Total Number of Dominant Species Across all Strata: **2** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **50.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 100	x 3 = 300
FACU species 0	x 4 = 0
UPL species 20	x 5 = 100
Column totals 120	(A) 400 (B)

Prevalence Index = B/A = **3.33**

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No **X**

Remarks: (If observed, list morphological adaptations below).
Very deep leaf/pine needle litter. Herb layer nearly absent.

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 ¹	Loc2		
0-12+	2.5Y 2.5 / 1	100					sand	gritty, coal-like

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks: **Soils have been influenced by railroad. Soil is coal-like and gritty.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 15, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 04-WTL-58-wet-1
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.958477 Long: -77.410179 Datum: NAD-1983
 Soil Map Unit Name: Bibb-Chastain complex, 0 to 2 percent slopes, frequently flooded NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is the bottomland hardwood wetland portion of 12AWTL4, just before it proceeds upslope. This is a high quality B4 wetland. Field Sheet 12AWTL4DP2, wetD21.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u>X</u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	--

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

Remarks: **This portion of the bottomland hardwood is saturated to the surface. Some small areas are ponded.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-58-wet-1**

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Quercus phellos</u>	60	Y	FACW
2 <u>Betula nigra</u>	30	Y	FACW
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			

90 = Total Cover
 50% of total cover: **45** 20% of total cover: **18**

Sapling/Shrub Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Acer rubrum</u>	20	Y	FAC
2 _____			
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			

20 = Total Cover
 50% of total cover: **10** 20% of total cover: **4**

Herb Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Carex spp.</u>	1		
2 <u>Carex intumescens</u>	1		FACW
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			
9 _____			
10 _____			
11 _____			
12 _____			

2 = Total Cover
 50% of total cover: **1** 20% of total cover: **0.4**

Woody Vine Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Smilax spp.</u>	10	Y	
2 _____			
3 _____			
4 _____			
5 _____			

10 = Total Cover
 50% of total cover: **5** 20% of total cover: **2**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **3** (A)

Total Number of Dominant Species Across all Strata: **4** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **75.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 91	x 2 = 182
FAC species 20	x 3 = 60
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column totals 111 (A)	242 (B)

Prevalence Index = B/A = **2.18**

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).
Herb layer nearly absent

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 ¹	Loc ²		
0-6	2.5Y 3 / 1	95	10YR 5 / 6	5			sandy loam	lots of organic matter
6-12	10YR 6 / 2	95	2.5Y 4 / 1	5			loamy sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **Soils are saturated.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 15, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 04-WTL-58-upl-1
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): ballast toe Local relief (concave, convex, none): none Slope (%): 5
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.958486 Long: -77.410244 Datum: NAD-1983
 Soil Map Unit Name: Bibb-Chastain complex, 0 to 2 percent slopes, frequently flooded NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Upland data point taken on high area between wetland 4 and the ballast. Soils are well drained. Sweetgum and loblolly pine are the dominant species. Field Sheet 12-A-WTL-04, upDP2.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
--	--

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

Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-58-upl-1**

Tree Stratum	(Plot Size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Pinus taeda	60	Y	FAC
2	Liquidambar styraciflua	50	Y	FAC
3	Betula nigra	10	N	FACW
4				
5				
6				
7				
8				

120 = Total Cover
 50% of total cover: **60** 20% of total cover: **24**

Sapling/Shrub Stratum	(Plot Size: 15' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Quercus phellos	30	Y	FACW
2				
3				
4				
5				
6				
7				
8				

30 = Total Cover
 50% of total cover: **15** 20% of total cover: **6**

Herb Stratum	(Plot Size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **3** (A)

Total Number of Dominant Species Across all Strata: **3** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **100.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 40	x 2 = 80
FAC species 110	x 3 = 330
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column totals 150 (A)	410 (B)

Prevalence Index = B/A = **2.73**

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).

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 ¹	Loc2		
0-7	2.5Y	3 / 1	100					loamy sand	
7-12+	2.5Y	3 / 1	80	2.5Y	5 / 4	20		loamy sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	(MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators 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 X

Remarks: **Soils are well drained.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 15, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 04-WTL-58-wet-2
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.956363 Long: -77.403975 Datum: NAD-1983
 Soil Map Unit Name: Bojac sandy loam, 0 to 6 percent slopes, very rarely flooded NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Wetland is part of the Polecat Creek floodplain. Surface water is present throughout. River birch, red maple, and green ash are dominant vegetation species. Field Sheet 12A-WTL-04, wetDP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u>X</u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u>X</u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u>X</u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u>X</u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u><12 inches</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	--

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

Remarks: **Surface water is present. Soils are saturated. Buttressed trees.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-58-wet-2**

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Betula nigra</u>	50	Y	FACW
2 <u>Acer rubrum</u>	50	Y	FAC
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			

100 = Total Cover

50% of total cover: **50** 20% of total cover: **20**

Sapling/Shrub Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Fraxinus pennsylvanica</u>	60	Y	
2 _____			
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			

60 = Total Cover

50% of total cover: **30** 20% of total cover: **12**

Herb Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Carex spp.</u>	30	Y	
2 <u>Juncus effusus</u>	5	N	OBL
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			
9 _____			
10 _____			
11 _____			
12 _____			

35 = Total Cover

50% of total cover: **17.5** 20% of total cover: **7**

Woody Vine Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>none</u>			
2 _____			
3 _____			
4 _____			
5 _____			

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **2** (A)

Total Number of Dominant Species Across all Strata: **4** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **50.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 5	x 1 = 5
FACW species 50	x 2 = 100
FAC species 50	x 3 = 150
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column totals 105 (A)	255 (B)

Prevalence Index = B/A = **2.43**

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 15, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 04-WTL-58-upl-2
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): ridge Local relief (concave, convex, none): convex Slope (%): 5
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.956431 Long: -77.403715 Datum: NAD-1983
 Soil Map Unit Name: Bojac sandy loam, 0 to 6 percent slopes, very rarely flooded NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: **Upland data point taken on north side of WTL-04. It is a raised ridge. Hydrology is very weak. Field Sheet 12-A-WTL-04, upDP1.**

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	<u> </u> Surface Soil Cracks (B6)
<u> </u> Surface Water (A1)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> High Water Table (A2)	<u> </u> Drainage Patterns (B10)
<u> </u> Saturation (A3)	<u> </u> Moss Trim Lines (B16)
<u> </u> Water Marks (B1)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Sediment Deposits (B2)	<u> </u> Crayfish Burrows (C8)
<u> </u> Drift Deposits (B3)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Geomorphic Position (D2)
<u> </u> Iron Deposits (B5)	<u> </u> Shallow Aquitard (D3)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Water-Stained Leaves (B9)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Aquatic Fauna (B13)	
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u>X</u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations:	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe) Yes <u>X</u> No <u> </u> Depth (inches): <u>6-8</u>	

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

Remarks: **Although this sample point was saturated at 6-8 inches, it is believed that during the growing season, this area dries out and does not have sufficient hydrology.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-58-upl-2**

Tree Stratum	(Plot Size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Pinus taeda	60	Y	FAC
2	Quercus falcata	50	Y	FACU
3	Carpinus caroliniana	10	N	FAC
4				
5				
6				
7				
8				

120 = Total Cover
 50% of total cover: **60** 20% of total cover: **24**

Sapling/Shrub Stratum	(Plot Size: 15' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Ilex decidua	40	Y	FACW
2	Ilex opaca	20	Y	FAC
3				
4				
5				
6				
7				
8				

60 = Total Cover
 50% of total cover: **30** 20% of total cover: **12**

Herb Stratum	(Plot Size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Smilax spp.	25	Y	
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

25 = Total Cover
 50% of total cover: **12.5** 20% of total cover: **5**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **3** (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: **60.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 40	x 2 = 80
FAC species 90	x 3 = 270
FACU species 50	x 4 = 200
UPL species 0	x 5 = 0
Column totals 180	(A) 550 (B)

Prevalence Index = B/A = **3.06**

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).

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 ¹	Loc2		
0-5	10YR	3 / 1	100					loamy sand	
5-12+	10YR	6 / 4	100					loamy sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	(MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators 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 X

Remarks: **Soils are saturated below 6 inches.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 15, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 04-WTL-59-wet
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.959402 Long: -77.414266 Datum: NAD-1983
 Soil Map Unit Name: Altavista fine sandy loam, 2 to 6 percent slopes, very rarely flooded NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Ditch wetland between railroad access road and wooded area. Soils are saturated at surface with surface water present in eastern end of wetland. Field Sheet 12-A-WTL-01 wetDP1.	

HYDROLOGY

Wetland Hydrology Indicators:	<u>Secondary Indicators (minimum of two required)</u>
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Soils are saturated. Surface water not present, but saturated at surface. Likely seep water from hillside to the south.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-59-wet**

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 Pinus taeda	80	Y	FAC
2			
3			
4			
5			
6			
7			
8			

80 = Total Cover
 50% of total cover: **40** 20% of total cover: **16**

Sapling/Shrub Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 Pinus taeda	5	Y	FAC
2			
3			
4			
5			
6			
7			
8			

5 = Total Cover
 50% of total cover: **2.5** 20% of total cover: **1**

Herb Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 Lichen 1 (broad leaf)	50	Y	
2 Carex spp.	30	Y	
3 Scirpus spp.	20	N	
4 Pinus taeda	5	N	FAC
5 Lichen 2 (Xmas tree)	5	N	
6			
7			
8			
9			
10			
11			
12			

110 = Total Cover
 50% of total cover: **55** 20% of total cover: **22**

Woody Vine Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 none			
2			
3			
4			
5			

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **2** (A)

Total Number of Dominant Species Across all Strata: **4** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **50.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 90	x 3 = 270
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column totals 90 (A)	270 (B)

Prevalence Index = B/A = **3.00**

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes **X** No _____

Remarks: (If observed, list morphological adaptations below).
The overstory loblolly trees are rooted in the upland, and not in the wetland.

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 ¹	Loc2		
1-3	10YR	3 / 1	100					sandy loam	
3-12+	10YR	6 / 1	100					sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **Coal dust from CSX ballast probably contributing to dark matrix on the top. Soils below are strongly reduced.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-59-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	0	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	2	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	0	

Total Score 5

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-59-wet View of beaver jammed culvert.



04-WTL-59-wet View of railroad ditch wetland.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 15, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-59-upl
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 5
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.959282 Long: -77.414082 Datum: NAD-1983
 Soil Map Unit Name: Altavista fine sandy loam, 2 to 6 percent slopes, very rarely flooded NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: This is an upland point near the railroad ditch wetland 1. It is sloping and well drained. Field Sheet 12-A-WTL-01 upDP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
--	--

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

Remarks: **Area is sloping and well drained. No wetland hydrology present.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-59-upl**

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 Pinus taeda	100	Y	FAC
2 _____			
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			

100 = Total Cover

50% of total cover: **50** 20% of total cover: **20**

Sapling/Shrub Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 Liquidambar styraciflua	5	Y	FAC
2 Juniperus virginiana	5	Y	FACU
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			

10 = Total Cover

50% of total cover: **5** 20% of total cover: **2**

Herb Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 none			
2 _____			
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			
9 _____			
10 _____			
11 _____			
12 _____			

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Woody Vine Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 none			
2 _____			
3 _____			
4 _____			
5 _____			

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **2** (A)

Total Number of Dominant Species Across all Strata: **3** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **66.67%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 105	x 3 = 315
FACU species 5	x 4 = 20
UPL species 0	x 5 = 0
Column totals 110 (A)	335 (B)

Prevalence Index = B/A = **3.05**

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).
Very deep leaf/pine needle litter. Herb layer nearly absent.

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 ¹	Loc2		
0-12+	10YR	3 / 1	100				sand	well drained

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 15, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 04-WTL-60-wet
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 10
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.960446 Long: -77.421768 Datum: NAD-1983
 Soil Map Unit Name: Kempsville-Emporia complex, 2 to 6 percent slopes NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
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Remarks: **This is a hillside seep wetland that proceeds north/downslope into Mill Run. This is in the mowed/maintained powerline ROW. Hydrology appears to be groundwater seeping from the hillside to the east. Field Sheet 12-A-WTL-04, wetDP1.**

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	<u> </u> Surface Soil Cracks (B6)
<u>X</u> Surface Water (A1)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> High Water Table (A2)	<u>X</u> Drainage Patterns (B10)
<u>X</u> Saturation (A3)	<u> </u> Moss Trim Lines (B16)
<u> </u> Water Marks (B1)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Sediment Deposits (B2)	<u> </u> Crayfish Burrows (C8)
<u> </u> Drift Deposits (B3)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Geomorphic Position (D2)
<u> </u> Iron Deposits (B5)	<u> </u> Shallow Aquitard (D3)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Water-Stained Leaves (B9)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Aquatic Fauna (B13)	
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u>X</u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>up to 3</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	--

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

Remarks: **Water appears to be seep water from hillside. The railroad ditch to the southwest empties into the seep wetland, but it is generally dry with upland plants.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-60-wet**

Tree Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				

_____ = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				

_____ = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Microstegium vimineum	40	Y	FAC
2	Scirpus spp.	30	Y	
3	Murdannia spp.	15	N	
4	Typha latifolia	10	N	OBL
5	Shagnum spp.	5	N	
6				
7				
8				
9				
10				
11				
12				

_____ = Total Cover
 50% of total cover: **50** 20% of total cover: **20**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

_____ = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **1** (A)

Total Number of Dominant Species Across all Strata: **2** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **50.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 10	x 1 = 10
FACW species 0	x 2 = 0
FAC species 40	x 3 = 120
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column totals 50 (A)	130 (B)

Prevalence Index = B/A = **2.60**

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes **X** No _____

Remarks: (If observed, list morphological adaptations below).
Area has been mowed in the last 2 months.

SOIL

Sampling Point: 04-WTL-60-wet

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 ¹	Loc ²		
0-5	10YR	3 / 1	100					sandy loam	
5-10	10YR	5 / 1	95	10YR 5 / 6	5			sandy loam	
10-12	10YR	6 / 2	95	10YR 5 / 6	5			sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils ³ :		
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)			
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)			
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	(MLRA 153B)			
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)			
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)			
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)				
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)				
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)				
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)				
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)				
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)				
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)				
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)					

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

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric soil present? Yes X No _____

Remarks: **Soils were very saturated from groundwater seepage.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-60-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	0	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	0	

Total Score 2

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-60-wet Hillside seep.



04-WTL-60-wet Herbaceous vegetation in seep.



04-WTL-60-wet 12-A1-CUL-02 concrete 24 inches.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 15, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 04-WTL-60-upl
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 10
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.960358 Long: -77.421436 Datum: NAD-1983
 Soil Map Unit Name: Kempsville-Emporia complex, 2 to 6 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Upland data point taken on hillslope north of wetland 5 within power line corridor. Soil is moderately drained. Field Sheet 12-A-WTL-05, upDP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u>X</u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	--

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

Remarks: **Soil is moderately drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-60-upl**

Tree Stratum	(Plot Size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: 15' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Andropogon virginicus	80	Y	FAC
2	Carex spp.	5	N	
3	Pinus taeda	5	N	FAC
4				
5				
6				
7				
8				
9				
10				
11				
12				

90 = Total Cover
 50% of total cover: **45** 20% of total cover: **18**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **1** (A)

Total Number of Dominant Species Across all Strata: **1** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **100.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 85	x 3 = 255
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column totals 85	(A) 255 (B)

Prevalence Index = B/A = **3.00**

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).
Power line ROW was recently mowed.

SOIL

Sampling Point: 04-WTL-60-upl

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 ¹	Loc ²		
0-12+	10YR	5 / 3	100					loamy sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	(MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators 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 X

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 14, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-61-wet
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.957629 Long: -77.43498 Datum: NAD-1983
 Soil Map Unit Name: Kempsville-Emporia-Remlik complex, 15 to 50 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Large wetland part of Mill Run and Colemans Mill pond. This is a high quality PFO wetland on the margins that transitions into PSS and/or PEM as you proceed northeast. The east end becomes a pond as the water is too deep to be considered a wetland. Field Sheet 12-A-WTL-06 weDPT1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	<u> </u> Surface Soil Cracks (B6)
<u>X</u> Surface Water (A1)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> High Water Table (A2)	<u> </u> Drainage Patterns (B10)
<u>X</u> Saturation (A3)	<u> </u> Moss Trim Lines (B16)
<u> </u> Water Marks (B1)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Sediment Deposits (B2)	<u> </u> Crayfish Burrows (C8)
<u> </u> Drift Deposits (B3)	<u>X</u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Geomorphic Position (D2)
<u> </u> Iron Deposits (B5)	<u> </u> Shallow Aquitard (D3)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Water-Stained Leaves (B9)	<u> </u> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u><12 inches</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	--

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

Remarks: **Surface water present throughout majority of wetland. Soil is saturated.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-61-wet**

Tree Stratum	(Plot Size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Fraxinus (dead)	30	Y	
2	Fraxinus pennsylvanica	30	Y	FACW
3	Betula nigra	20	Y	FACW
4	Acer rubrum	20	Y	FAC
5				
6				
7				
8				

100 = Total Cover
 50% of total cover: **50** 20% of total cover: **20**

Sapling/Shrub Stratum	(Plot Size: 15' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Alnus	30	Y	
2				
3				
4				
5				
6				
7				
8				

30 = Total Cover
 50% of total cover: **15** 20% of total cover: **6**

Herb Stratum	(Plot Size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Murdannia keisak	30	Y	OBL
2	Carex spp.	25	Y	
3	Scirpus spp.	20	Y	
4	Smilax spp.	4	N	
5				
6				
7				
8				
9				
10				
11				
12				

79 = Total Cover
 50% of total cover: **39.5** 20% of total cover: **15.8**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **4** (A)

Total Number of Dominant Species Across all Strata: **8** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **50.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 30	x 1 = 30
FACW species 50	x 2 = 100
FAC species 20	x 3 = 60
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column totals 100 (A)	190 (B)

Prevalence Index = B/A = **1.90**

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).
Dead ash trees present. Lots of pepperbush around the wetland but not in the sample plot.

SOIL

Sampling Point: 04-WTL-61-wet

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 ¹	Loc ²		
0-12+	10YR	4 / 1	100				sandy clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	(MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **Soil is depleted. Soil was saturated and muck-like.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-61-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	3	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	3	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	2	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	3	

Total Score 13

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-61-wet Mill Run wetland



04-WTL-61-wet Mill Run wetland



04-WTL-61-wet Mill Run wetland



04-WTL-61-wet Mill run beaver pond/wetland



04-WTL-61-wet Backside of Mill Run beaver dam



04-WTL-61-wet Front side of Mill Run beaver dam

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 14, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 04-WTL-61-upl
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 10
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.957415 Long: -77.434768 Datum: NAD-1983
 Soil Map Unit Name: Kempsville-Emporia-Remlik complex, 15 to 50 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil X, or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Upland data point taken on bank of old access road between Wetland 06 and railroad. Soil is well drained. Soil is influenced by railroad activities (coal-like). Field Sheet 12-A-WTL-06 upDP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
--	--

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

Remarks: **Soil is somewhat coal-like, well-drained. Soil is influenced by railroad activities.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-61-upl**

Tree Stratum	(Plot Size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Quercus falcata	80	Y	FACU
2	Pinus taeda	30	Y	FAC
3	Liquidambar styraciflua	30	Y	FAC
4	Fagus grandifolia	30	Y	FACU
5				
6				
7				
8				

170 = Total Cover
 50% of total cover: **85** 20% of total cover: **34**

Sapling/Shrub Stratum	(Plot Size: 15' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Quercus alba	45	Y	FACU
2	Pinus taeda	30	Y	FAC
3	Liquidambar styraciflua	30	Y	FAC
4				
5				
6				
7				
8				

105 = Total Cover
 50% of total cover: **52.5** 20% of total cover: **21**

Herb Stratum	(Plot Size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Smilax spp.	45	Y	
2	Ilex opaca	5	N	FAC
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

50 = Total Cover
 50% of total cover: **25** 20% of total cover: **10**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **4** (A)

Total Number of Dominant Species Across all Strata: **8** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **50.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 125	x 3 = 375
FACU species 155	x 4 = 620
UPL species 0	x 5 = 0
Column totals 280 (A)	995 (B)

Prevalence Index = B/A = **3.55**

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No **X**

Remarks: (If observed, list morphological adaptations below).
The upland point was very well drained, which made a vegetation transition to upland forest.

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 ¹	Loc2		
0-12	10YR 3 / 1	100					loamy sand	coal-like

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	(MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators 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 X

Remarks: **Soils have been influenced by railroad activity. Somewhat coal-like, gritty.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 14, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 04-WTL-62-wet
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): RR ditch Local relief (concave, convex, none): concave Slope (%): 5
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.953733 Long: -77.440149 Datum: NAD-1983
 Soil Map Unit Name: Bibb-Chastain complex, 0 to 2 percent slopes, frequently flooded NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is a saturated railroad ditch wetland. The soils are super saturated in the bottom of the ditch indicating that there is a ground water connection. Field Sheet 12-A-WTL-05 wet1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u>X</u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u>X</u> Hydrogen Sulfide Odor (C1)	
<u>X</u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>3 inches</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? (includes capillary fringe) Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u>	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	---

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

Remarks: **Likely that groundwater is the cause of the saturation.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-62-wet**

Tree Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				

_____ = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				

_____ = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Scirpus spp.	40	Y	
2	Microstegium vimineum	30	Y	FAC
3	Juncus effusus	20	Y	OBL
4	Sphagnum spp.	10	N	
5				
6				
7				
8				
9				
10				
11				
12				

_____ = Total Cover
 50% of total cover: **50** 20% of total cover: **20**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

_____ = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **2** (A)

Total Number of Dominant Species Across all Strata: **3** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **66.67%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 20	x 1 = 20
FACW species 0	x 2 = 0
FAC species 30	x 3 = 90
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column totals 50 (A)	110 (B)

Prevalence Index = B/A = **2.20**

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).
Very narrow PEM wetland.

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 ¹	Loc ²		
0-3	10YR	3 / 1	100					silty clay loam	
3-6	10YR	6 / 1	95	10YR 5 / 4	5			sandy loam	
6-12	10YR	5 / 2	100					sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **Soils are very mucky in the top 3 inches, with a lot of organic matter.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-62-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	0	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	0	

Total Score 2

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-62-wet View of railroad ditch wetland



04-WTL-62-wet View of railroad ditch wetland



04-WTL-62-wet View of railroad ditch wetland

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-62-upl**

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 Pinus taeda	80	Y	FAC
2 _____			
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			

_____ = Total Cover
 50% of total cover: **40** 20% of total cover: **16**

Sapling/Shrub Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 Pinus taeda	30	Y	FAC
2 _____			
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			

_____ = Total Cover
 50% of total cover: **15** 20% of total cover: **6**

Herb Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 Ilex opaca	4		FAC
2 _____			
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			
9 _____			
10 _____			
11 _____			
12 _____			

_____ = Total Cover
 50% of total cover: **2** 20% of total cover: **0.8**

Woody Vine Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 none			
2 _____			
3 _____			
4 _____			
5 _____			

_____ = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **2** (A)

Total Number of Dominant Species Across all Strata: **2** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **100.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 114	x 3 = 342
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column totals 114 (A)	342 (B)

Prevalence Index = B/A = **3.00**

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).
Herb layer nearly absent.

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 ¹	Loc2		
0-3	10YR	3 / 1	100					sandy loam	organics
3-12+	7.5YR	5 / 6	100					sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils ³ :		
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)			
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)			
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)			
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)			
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)			
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)				
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)				
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)				
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)				
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)				
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)				
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)				
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)					

³Indicators 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 X

Remarks: **Soils are not reduced. Well drained.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 14, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-63-wet
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): pond/depression Local relief (concave, convex, none): concave Slope (%): 5%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.942552 Long: -77.445531 Datum: NAD-1983
 Soil Map Unit Name: Bibb-Chastain complex, 0 to 2 percent slopes, frequently flooded NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This pond was likely created when the old logging road was built. Beaver activity has created the ponding and dam blocks the road culvert. Pond is dominated by aquatic macrophytes (coontail and Eurasian water milfoil) while the fringe is soft rush. Field Sheet 12-A-WTL-03 wet DP1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	<u> </u> Surface Soil Cracks (B6)
<u>X</u> Surface Water (A1)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> High Water Table (A2)	<u> </u> Drainage Patterns (B10)
<u>X</u> Saturation (A3)	<u> </u> Moss Trim Lines (B16)
<u> </u> Water Marks (B1)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Sediment Deposits (B2)	<u> </u> Crayfish Burrows (C8)
<u> </u> Drift Deposits (B3)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Geomorphic Position (D2)
<u> </u> Iron Deposits (B5)	<u> </u> Shallow Aquitard (D3)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Water-Stained Leaves (B9)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Aquatic Fauna (B13)	
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u>X</u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u><18 inches</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	---

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

Remarks: **Surface water and saturation are present.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-63-wet**

Tree Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				

_____ = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				

_____ = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Juncus effusus	85	Y	OBL
2	Scirpus spp.	15	N	
3	Echinochloa crus-galli	10	N	FACW
4				
5				
6				
7				
8				
9				
10				
11				
12				

_____ = Total Cover
 50% of total cover: **55** 20% of total cover: **22**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

_____ = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)
 Total Number of Dominant Species Across all Strata: _____ (B)
 Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet
 Total % Cover of: _____ Multiply by: _____
 OBL species _____ x 1 = _____
 FACW species _____ x 2 = _____
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column totals _____ (A) _____ (B)
 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
 1 -Rapid Test for Hydrophytic Vegetation
 _____ 2 - Dominance Test is >50%
 _____ 3 - Prevalence Index is ≤3.0¹
 _____ Problematic Hydrophytic Vegetation¹ (Explain)

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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No _____

Remarks: (If observed, list morphological adaptations below).
Fish in pond. Upland is well defined and steep.

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 ¹	Loc2		
0-4	10YR 5 / 2	95		10YR 5 / 6	5			sandy loam	organics
4-9	10YR 5 / 1	90		10YR 5 / 8	10			sandy clay	
9-12+	10YR 5 / 1	90		10YR 5 / 8	10			silty clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **Soils are being reduced from prolonged inundation/saturation.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-63-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	3	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 9

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-63-wet View of beaver pond downstream from STR-02.



04-WTL-63-wet View of beaver pond.



04-WTL-63-wet View of beaver dam by culvert.



04-WTL-63-wet View of channel below beaver pond.



04-WTL-63-wet Wetland soils



04-WTL-63-wet View of upland

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 14, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-63-upl
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 20
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.936835 Long: -77.446868 Datum: NAD-1983
 Soil Map Unit Name: Myatt-Slagle complex, 0 to 2 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Data point taken on hillslope south of WTL-03 Soil is well drained. Virginia pine is dominant vegetation species. Herb layer is nearly absent. Field Sheet 12-A-WTL-03 updp1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
--	--

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

Remarks: **Soil is well drained. No saturation present.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-63-upl**

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 Pinus virginiana	90	Y	
2			
3			
4			
5			
6			
7			
8			

_____ = Total Cover
 50% of total cover: **45** 20% of total cover: **18**

Sapling/Shrub Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 Pinus virginiana	20	Y	
2			
3			
4			
5			
6			
7			
8			

_____ = Total Cover
 50% of total cover: **10** 20% of total cover: **4**

Herb Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 Pinus taeda	5	Y	FAC
2 Andropogon virginicus	4	Y	FAC
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

_____ = Total Cover
 50% of total cover: **4.5** 20% of total cover: **1.8**

Woody Vine Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 none			
2			
3			
4			
5			

_____ = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **2** (A)

Total Number of Dominant Species Across all Strata: **4** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **50.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 9	x 3 = 27
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column totals 9 (A)	27 (B)

Prevalence Index = B/A = **3.00**

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No _____

Remarks: (If observed, list morphological adaptations below).
Pine needle and leaf litter very deep, which inhibits herbaceous growth.

SOIL

Sampling Point: 04-WTL-63-upl

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 ¹	Loc2		
0-12+	10YR	5 / 6	100				clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks: **Soils are a deep orange color. Soil is well drained.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 14, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-64-wet
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): beaver pond and seep Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.936934 Long: -77.446776 Datum: NAD-1983
 Soil Map Unit Name: Myatt-Slagle complex, 0 to 2 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is an old pond and fringe wetland that was probably created when the old logging road was built. Beavers have altered the hydrology. The road would be omitted from the wetland polygon. Field Sheet 12-A-WTL-02 fringe.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u>X</u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u>X</u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>12 inches</u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? (includes capillary fringe) Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u>	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	---

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

Remarks: **Soil is saturated. Data point taken adjacent to ponded area/surface water, between logging road and ballast. Drains to concrete culvert under CSX ROW that is nearly buried.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-64-wet**

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 Acer rubrum	80	Y	FAC
2			
3			
4			
5			
6			
7			
8			

80 = Total Cover
 50% of total cover: **40** 20% of total cover: **16**

Sapling/Shrub Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 Acer rubrum	30	Y	FAC
2			
3			
4			
5			
6			
7			
8			

30 = Total Cover
 50% of total cover: **15** 20% of total cover: **6**

Herb Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 Scirpus fluviatus	5	Y	
2 Carex intumescens	2	Y	FACW
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

7 = Total Cover
 50% of total cover: **3.5** 20% of total cover: **1.4**

Woody Vine Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 none			
2			
3			
4			
5			

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **3** (A)

Total Number of Dominant Species Across all Strata: **4** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **75.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 2	x 2 = 4
FAC species 110	x 3 = 330
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column totals 112 (A)	334 (B)

Prevalence Index = B/A = **2.98**

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).
Herbaceous layer nearly absent.

SOIL

Sampling Point: 04-WTL-64-wet

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 ¹	Loc ²		
0-12	10YR	5 / 2	70	10YR	5 / 6	30		silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric soil present? Yes X No _____

Remarks: **Soils are being reduced.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-64-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	2	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	3	

Total Score 11

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-64-wet Beaver pond with wetland fringe.



04-WTL-64-wet Beaver pond with wetland fringe.



04-WTL-64-wet View of wetland.



04-WTL-64-wet View of multi-stemmed trees.



04-WTL-64-wet View of wetland fringe.



04-WTL-64-wet View of upland terrace.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 14, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 04-WTL-64-upl
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 20
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.936835 Long: -77.446868 Datum: NAD-1983
 Soil Map Unit Name: Myatt-Slagle complex, 0 to 2 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Upland data point taken on a high area south of Wetland 2. Soil is well drained. Loblolly pine is the dominant vegetation species. Field Sheet 12-A-WTL-02 upd1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
--	--

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

Remarks: **Soil is well drained. Data point taken on a hillslope/high area.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-64-upl**

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Pinus taeda</u>	75	Y	FAC
2 <u>Quercus rubra</u>	15	N	FACU
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			

90 = Total Cover
 50% of total cover: **45** 20% of total cover: **18**

Sapling/Shrub Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Pinus taeda</u>	10	Y	FAC
2 _____			
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			

10 = Total Cover
 50% of total cover: **5** 20% of total cover: **2**

Herb Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Pinus taeda</u>	10	Y	FAC
2 <u>Ilex opaca</u>	10	Y	FAC
3 <u>Juniperus virginiana</u>	2	N	FACU
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			
9 _____			
10 _____			
11 _____			
12 _____			

22 = Total Cover
 50% of total cover: **11** 20% of total cover: **4.4**

Woody Vine Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>none</u>			
2 _____			
3 _____			
4 _____			
5 _____			

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **4** (A)

Total Number of Dominant Species Across all Strata: **4** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **100.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 105	x 3 = 315
FACU species 17	x 4 = 68
UPL species 0	x 5 = 0
Column totals 122 (A)	383 (B)

Prevalence Index = B/A = **3.14**

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).
Area is a well drained upland forest.

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 ¹	Loc ²		
0-12+	10YR	5 / 4	100				sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks: **Soils are well drained upland soils that are not reduced.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 14, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-65-wet
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): pond fringe Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.931151 Long: -77.450197 Datum: NAD-1983
 Soil Map Unit Name: Bibb-Chastain complex, 0 to 2 percent slopes, frequently flooded NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Large wetland on northwest side of railroad that abuts the railroad ballast. This is a beaver pond wetland/pond. Wetland plants are on the fringe of the wetland with aquatic macrophytes in the ponded portion. Wetland is part of Reedy Creek. Field Sheet 12-A-WTL-01 fringe, Reedy Creek.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u>X</u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u>X</u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>2</u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **If the beaver dam were removed, the water level would drop ~5 feet. The sample point was in the southern most fringe.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-65-wet**

Tree Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Bolboschoenus fluviatilis	50	Y	OBL
2	Juncus effusus	30	Y	OBL
3	Unknown spp.	10	N	
4				
5				
6				
7				
8				
9				
10				
11				
12				

90 = Total Cover

50% of total cover: **45** 20% of total cover: **18**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: _____ (B)

Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column totals _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).

The wetland fringe is dominated with soft rush and bullrush.

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 ¹	Loc2		
0-11	10YR 4 / 1	95	10YR 5 / 6	5			sandy clay	lots of organic matter
11-12+	10YR 5 / 8	65	10YR 6 / 2	35			sandy clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **Soils depleted in top 11 inches.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-65-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	3	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	3	

Total Score 13

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-65-wet View of beaver dam looking away from railroad



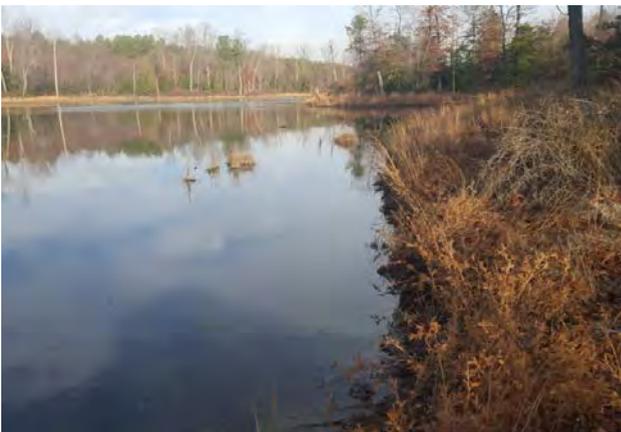
04-WTL-65-wet View of beaver dam looking toward railroad, wetland fringe in the foreground



04-WTL-65-wet View of wetland fringe



04-WTL-65-wet Wetland fringe with rail in the top right



04-WTL-65-wet View of beaver pond with wetland fringe

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 14, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 04-WTL-65-upl
 Investigator(s): L. Eggering, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 5
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.931235 Long: -77.450318 Datum: NAD-1983
 Soil Map Unit Name: Slagle-Kempsville complex, 2 to 15 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Upland point taken at high area adjacent to WTL-01. Soils were moderately well drained. Field Sheet 12-A-WTL-01 upd1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
--	--

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

Remarks: **Soil was moderately drained. No saturation.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-65-upl**

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 Liquidambar styraciflua	10	Y	FAC
2 _____			
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			

_____ = Total Cover
 50% of total cover: **5** 20% of total cover: **2**

Sapling/Shrub Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 Liquidambar styraciflua	20	Y	FAC
2 Rubus spp.	20	Y	
3 Pinus taeda	5	N	FAC
4 Juniperus virginiana	5	N	FACU
5 _____			
6 _____			
7 _____			
8 _____			

_____ = Total Cover
 50% of total cover: **25** 20% of total cover: **10**

Herb Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 Unknown spp.	60	Y	
2 Aster simplex	10	N	
3 Fescue spp.	2	N	
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			
9 _____			
10 _____			
11 _____			
12 _____			

_____ = Total Cover
 50% of total cover: **36** 20% of total cover: **14.4**

Woody Vine Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1 none			
2 _____			
3 _____			
4 _____			
5 _____			

_____ = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **2** (A)

Total Number of Dominant Species Across all Strata: **4** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **50.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 35	x 3 = 105
FACU species 5	x 4 = 20
UPL species 0	x 5 = 0
Column totals 40 (A)	125 (B)

Prevalence Index = B/A = **3.13**

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes _____ No **X**

Remarks: (If observed, list morphological adaptations below).
Large dead cedar present. Beavers were cutting down most of the woody succession.

SOIL

Sampling Point: 04-WTL-65-upl

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 ¹	Loc ²		
0-12+	10YR	5 / 3	55	10YR	5 / 6	45		sandy clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric soil present? Yes _____ No X

Remarks: **Soils not reduced on this well drained area.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 10, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-67-wet
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): RR ditch Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.92574 Long: -77.461145 Datum: NAD-1983
 Soil Map Unit Name: Kempsville-Emporia-Remlik complex, 15 to 50 percent slopes NWI classification: PEM
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is a railroad ditch wetland. It is connected to STR-09 which flows under the railroad and then becomes STR-08. Field Sheet 12-WTL14-Wet1, Team A.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>2</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>5</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	--

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

Remarks: **This area receives runoff and groundwater seepage from adjacent hills.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-67-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</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>80.00%</u> (A/B)
2				
3				
4				
5				
6				
7				
8				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				Prevalence Index worksheet Total % Cover of: Multiply by: OBL species <u>60</u> x 1 = <u>60</u> FACW species <u>15</u> x 2 = <u>30</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>85</u> (A) <u>120</u> (B) Prevalence Index = B/A = <u>1.41</u>
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Alnus serrulata</u>	<u>15</u>	<u>Y</u>	<u>FACW</u>	
2 <u>Pinus taeda</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
3				
4				
5				
6				
7				
8				
50% of total cover <u>12.5</u> 20% of total cover: <u>5</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Leersia oryzoides</u>	<u>30</u>	<u>Y</u>	<u>OBL</u>	
2 <u>Juncus effusus</u>	<u>15</u>	<u>Y</u>	<u>OBL</u>	
3 <u>Carex spp.</u>	<u>15</u>	<u>Y</u>		
4 <u>Typha angustifolia</u>	<u>10</u>	<u>N</u>	<u>OBL</u>	
5 <u>Smilax spp.</u>	<u>10</u>	<u>N</u>		
6 <u>Scirpus cyperinus</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	
7				
8				
9				
10				
11				
12				
50% of total cover <u>42.5</u> 20% of total cover: <u>17</u>				Hydrophytic Vegetation Indicators: <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 <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				
2				
3				
4				
5				
50% of total cover <u>0</u> 20% of total cover: <u>0</u>				

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).
Narrow wetland containing hydric vegetation in ditch.

SOIL

Sampling Point: **04-WTL-67-wet**

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 ¹	Loc ²		
0-4	2.5Y 3 / 1	100					silt loam	
4-15	5Y 4 / 1	100					sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input checked="" type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-67-wet

Project/Site: DC2RVA-Segment 12

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	0	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	0	

Total Score 2

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-67-wet

Hillside seep.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 10, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-67-upl
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 15%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.92581989 Long: -77.461279 Datum: NAD-1983
 Soil Map Unit Name: Kempsville-Emporia-Remlik complex, 15 to 50 percent slopes NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	
Remarks: Upland data point. Field Sheet 12-WTL14-Up1, Team A.			

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations:	
Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (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: **04-WTL-67-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Pinus virginiana</u>	<u>30</u>	<u>Y</u>	
2	<u>Pinus taeda</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				
8				

60 = Total Cover
50% of total cover 30 20% of total cover: 12

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Pinus virginiana</u>	<u>30</u>	<u>Y</u>	
2	<u>Quercus falcata</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>
3	<u>Fagus grandifolia</u>	<u>10</u>	<u>N</u>	<u>FACU</u>
4				
5				
6				
7				
8				

55 = Total Cover
50% of total cover 27.5 20% of total cover: 11

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Smilax spp.</u>	<u>10</u>	<u>Y</u>	
2	<u>Pinus virginiana</u>	<u>10</u>	<u>Y</u>	
3	<u>Pinus taeda</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
4				
5				
6				
7				
8				
9				
10				
11				
12				

30 = Total Cover
50% of total cover 15 20% of total cover: 6

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
50% of total cover 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 7 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 28.57% (A)

Prevalence Index worksheet

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>40</u>	x 3 = <u>120</u>
FACU species <u>25</u>	x 4 = <u>100</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>65</u> (A)	<u>220</u> (B)

Prevalence Index = B/A = 3.38

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0
 - Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No X

Remarks: (If observed, list morphological adaptations below).

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 ¹	Loc2		
0-10	10YR 3 / 3	100					sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks: **Soils dry and more crumbly than adjacent wetland.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-68-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>none</u>				Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)	
2 _____				Total Number of Dominant Species Across all Strata: _____ (B)	
3 _____				Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)	
4 _____					
5 _____					
6 _____					
7 _____					
50% of total cover <u>0</u>			<u>0</u> = Total Cover		
20% of total cover: <u>0</u>					
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet	
1 <u>none</u>				Total % Cover of: _____ Multiply by: _____	
2 _____				OBL species _____ x 1 = _____	
3 _____				FACW species _____ x 2 = _____	
4 _____				FAC species _____ x 3 = _____	
5 _____				FACU species _____ x 4 = _____	
6 _____				UPL species _____ x 5 = _____	
7 _____				Column totals _____ (A) _____ (B)	
8 _____				Prevalence Index = B/A = _____	
9 _____					
50% of total cover <u>0</u>			<u>0</u> = Total Cover		
20% of total cover: <u>0</u>					
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:	
1 <u>Leersia oryzoides</u>	<u>80</u>	<u>Y</u>	<u>OBL</u>	<input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation	
2 <u>Sphagnum spp.</u>	<u>80</u>	<u>Y</u>		<input type="checkbox"/> 2 - Dominance Test is >50%	
3 <u>Juncus effusus</u>	<u>20</u>	<u>N</u>	<u>FACW</u>	<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹	
4 <u>Alisma plantago-aquatica</u>	<u>10</u>	<u>N</u>		<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5 <u>Dicanthilium spp.</u>	<u>5</u>	<u>N</u>		<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
6 _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
7 _____					
8 _____					
9 _____					
10 _____					
11 _____					
50% of total cover <u>97.5</u>			<u>195</u> = Total Cover		
20% of total cover: <u>39</u>					
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Definitions of Four Vegetation Strata:	
1 <u>none</u>				Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
2 _____				Sapling/shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1m) tall.	
3 _____				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
4 _____				Woody vines - All woody vines greater than 3.28 ft in height.	
5 _____					
50% of total cover <u>0</u>			<u>0</u> = Total Cover		
20% of total cover: <u>0</u>					
				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

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

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 ¹	Loc ²		
0-1	2.5Y 2.5 / 1	100					silt loam	
1-3	5Y 4 / 1	100					sandy loam	fine sandy loam
3-8	5Y 6 / 2	100					sandy loam	fine sandy loam
8-15+	5Y 7 / 2	90	2.5Y 6 / 8	10			sand	fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Mucky Mineral (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 Soils³:

- 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)

³Indicators 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:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-68-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	0	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	0	

Total Score 2

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-68-wet View of wetland



04-WTL-68-wet View of wetland



04-WTL-68-wet View of wetland



04-WTL-68-wet View of wetland under Ruther Glen (Rt 652) overpass



04-WTL-68-wet Wetland soil core



04-WTL-68-wet View of upland

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-68-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status																							
1 <u>Pinus taeda</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</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>20.00%</u> (A/B)																						
2 <u>Pinus virginiana</u>	<u>20</u>	<u>Y</u>																								
3 <u>Liriodendron tulipifera</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>																							
4 <u>Betula nigra</u>	<u>10</u>	<u>N</u>	<u>FACW</u>																							
5 _____				Prevalence Index worksheet <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:50%;"></th> <th style="width:25%;">Total % Cover of:</th> <th style="width:25%;">Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species</td> <td style="text-align:center;"><u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species</td> <td style="text-align:center;"><u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species</td> <td style="text-align:center;"><u>20</u></td> <td>x 3 = <u>60</u></td> </tr> <tr> <td>FACU species</td> <td style="text-align:center;"><u>15</u></td> <td>x 4 = <u>60</u></td> </tr> <tr> <td>UPL species</td> <td style="text-align:center;"><u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column totals</td> <td style="text-align:center;"><u>45</u> (A)</td> <td><u>140</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>3.11</u>			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>15</u>	x 4 = <u>60</u>	UPL species	<u>0</u>	x 5 = <u>0</u>	Column totals	<u>45</u> (A)	<u>140</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>15</u>	x 4 = <u>60</u>																								
UPL species	<u>0</u>	x 5 = <u>0</u>																								
Column totals	<u>45</u> (A)	<u>140</u> (B)																								
6 _____																										
7 _____																										
	<u>65</u> = Total Cover																									
	50% of total cover <u>32.5</u>	20% of total cover: <u>13</u>																								
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)																										
1 <u>Quercus velutina</u>	<u>5</u>	<u>Y</u>		Hydrophytic Vegetation Indicators: <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 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)																						
2 _____																										
3 _____																										
4 _____																										
5 _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic																						
6 _____																										
7 _____																										
8 _____																										
9 _____				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 (1m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height.																						
10 _____																										
11 _____																										
	<u>5</u> = Total Cover																									
	50% of total cover <u>2.5</u>	20% of total cover: <u>1</u>																								
Herb Stratum (Plot Size: <u>5' radius</u>)																										
1 <u>Lonicera spp.</u>	<u>10</u>	<u>Y</u>		Hydrophytic Vegetation Present? Yes _____ No <u>X</u>																						
2 _____																										
3 _____																										
4 _____																										
5 _____																										
6 _____																										
7 _____																										
8 _____																										
9 _____																										
10 _____																										
11 _____																										
	<u>10</u> = Total Cover																									
	50% of total cover <u>5</u>	20% of total cover: <u>2</u>																								
Woody Vine Stratum (Plot Size: <u>30' radius</u>)																										
1 _____																										
2 _____																										
3 _____																										
4 _____																										
5 _____																										
6 _____																										
7 _____																										
8 _____																										
	<u>0</u> = Total Cover																									
	50% of total cover <u>0</u>	20% of total cover: <u>0</u>																								

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

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 10, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-69-wet
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.92559414 Long: -77.46155607 Datum: NAD-1983
 Soil Map Unit Name: Kempsville-Emporia-Remlik complex, 15 to 50 percent slopes NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is another small railroad ditch wetland. The same datasheet was used for both 04-WTL-69 and 04-WTL-70; it is believed that 04-WTL-69 connects to 04-WTL-70 outside of the Project Study Area. Field Sheet 12-WTL15-Wet1, Team A.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u><4 inches</u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>Surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-69-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1 <u>Acer rubrum</u>	<u>30</u>		<u>FAC</u>	Dominance Test worksheet: 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 <u>Liquidambar styraciflua</u>	<u>20</u>		<u>FAC</u>	
3 <u>Liriodendron tulipifera</u>	<u>10</u>		<u>FACU</u>	
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
<u>60</u> = Total Cover 50% of total cover <u>30</u> 20% of total cover: <u>12</u>				Prevalence Index worksheet 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>81</u> x 3 = <u>243</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>91</u> (A) <u>283</u> (B) Prevalence Index = B/A = <u>3.11</u>
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
2 <u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
3 <u>Ilex opaca</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
<u>30</u> = Total Cover 50% of total cover <u>15</u> 20% of total cover: <u>6</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Pinus taeda</u>	<u>1</u>		<u>FAC</u>	
2 _____				
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
9 _____				
10 _____				
11 _____				
12 _____				
<u>1</u> = Total Cover 50% of total cover <u>0.5</u> 20% of total cover: <u>0.2</u>				Hydrophytic Vegetation Indicators: <u>1</u> -Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 _____ Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				
2 _____				
3 _____				
4 _____				
5 _____				
<u>0</u> = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Hydrophytic vegetation present? Yes <input checked="" type="checkbox"/> No _____				

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: **04-WTL-69-wet**

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 ¹	Loc ²		
0-4	2.5Y	3 / 1	100					silt loam	
4-12	5Y	4 / 1	100					silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils ³ :		
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)			
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)			
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)			
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input checked="" type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)			
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)			
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)				
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)				
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)				
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)				
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)				
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)				
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)				
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)					

³Indicators 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:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-69-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Pinus virginiana</u>	<u>30</u>	<u>Y</u>	
2	<u>Pinus taeda</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
3	<u>Liriodendron tulipifera</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>
4				
5				
6				
7				
8				
		<u>75</u> = Total Cover		
		50% of total cover <u>37.5</u>	20% of total cover: <u>15</u>	

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Ilex opaca</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2	<u>Quercus falcata</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
3				
4				
5				
6				
7				
8				
		<u>20</u> = Total Cover		
		50% of total cover <u>10</u>	20% of total cover: <u>4</u>	

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Smilax spp.</u>	<u>10</u>	<u>Y</u>	
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
		<u>10</u> = Total Cover		
		50% of total cover <u>5</u>	20% of total cover: <u>2</u>	

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
		<u>0</u> = Total Cover		
		50% of total cover <u>0</u>	20% of total cover: <u>0</u>	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 33.33% (A)

Prevalence Index worksheet

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>40</u>	x 3 = <u>120</u>
FACU species <u>25</u>	x 4 = <u>100</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>65</u> (A)	<u>220</u> (B)

Prevalence Index = B/A = 3.38

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No X

Remarks: (If observed, list morphological adaptations below).

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 ¹	Loc2		
0-10	10YR 3 / 3	100					sandy loam	
10-15	10YR 4 / 4	100					clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 10, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-70-wet
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.92559414 Long: -77.46155607 Datum: NAD-1983
 Soil Map Unit Name: Kempsville-Emporia-Remlik complex, 15 to 50 percent slopes NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is another small railroad ditch wetland. The same datasheet was used for both 04-WTL-69 and 04-WTL-70; it is believed that 04-WTL-69 connects to 04-WTL-70 outside of the Project Study Area. Field Sheet 12-WTL15-Wet1, Team A.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u><4 inches</u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>Surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-70-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1 <u>Acer rubrum</u>	<u>30</u>		<u>FAC</u>	Dominance Test worksheet: 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 <u>Liquidambar styraciflua</u>	<u>20</u>		<u>FAC</u>	
3 <u>Liriodendron tulipifera</u>	<u>10</u>		<u>FACU</u>	
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
<u>60</u> = Total Cover 50% of total cover <u>30</u> 20% of total cover: <u>12</u>				Prevalence Index worksheet 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>81</u> x 3 = <u>243</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>91</u> (A) <u>283</u> (B) Prevalence Index = B/A = <u>3.11</u> Hydrophytic Vegetation Indicators: _____ 1 -Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% _____ 3 - Prevalence Index is ≤3.0 _____ Problematic Hydrophytic Vegetation ¹ (Explain)
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				
1 <u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
2 <u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
3 <u>Ilex opaca</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
<u>30</u> = Total Cover 50% of total cover <u>15</u> 20% of total cover: <u>6</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)				
1 <u>Pinus taeda</u>	<u>1</u>		<u>FAC</u>	
2 _____				
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
9 _____				
10 _____				
11 _____				
12 _____				
<u>1</u> = Total Cover 50% of total cover <u>0.5</u> 20% of total cover: <u>0.2</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)				
1 <u>none</u>				
2 _____				
3 _____				
4 _____				
5 _____				
<u>0</u> = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Hydrophytic vegetation present? Yes <input checked="" type="checkbox"/> No _____				
Remarks: (If observed, list morphological adaptations below).				

SOIL

Sampling Point: **04-WTL-70-wet**

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 ¹	Loc2		
0-4	2.5Y 3 / 1	100					silt loam	
4-12	5Y 4 / 1	100					silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input checked="" type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-70-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Pinus virginiana</u>	<u>30</u>	<u>Y</u>	
2	<u>Pinus taeda</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
3	<u>Liriodendron tulipifera</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>
4				
5				
6				
7				
8				
		<u>75</u> = Total Cover		
		50% of total cover <u>37.5</u>	20% of total cover: <u>15</u>	

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Ilex opaca</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2	<u>Quercus falcata</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
3				
4				
5				
6				
7				
8				
		<u>20</u> = Total Cover		
		50% of total cover <u>10</u>	20% of total cover: <u>4</u>	

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Smilax spp.</u>	<u>10</u>	<u>Y</u>	
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
		<u>10</u> = Total Cover		
		50% of total cover <u>5</u>	20% of total cover: <u>2</u>	

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
		<u>0</u> = Total Cover		
		50% of total cover <u>0</u>	20% of total cover: <u>0</u>	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 33.33% (A)

Prevalence Index worksheet

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>40</u>	x 3 = <u>120</u>
FACU species <u>25</u>	x 4 = <u>100</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>65</u> (A)	<u>220</u> (B)

Prevalence Index = B/A = 3.38

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0
 - Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No X

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: **04-WTL-70-upl**

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 ¹	Loc ²		
0-10	10YR 3 / 3	100					sandy loam	
10-15	10YR 4 / 4	100					clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 10, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-71-wet
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.92545353 Long: -77.46155732 Datum: NAD-1983
 Soil Map Unit Name: Kempsville-Emporia-Remlik complex, 15 to 50 percent slopes NWI classification: PEM
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Railside ditch wetland. Field Sheet 12-WTL13-Wet1, Team A. Note: No photograph of this wetland.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<input checked="" 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"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<input type="checkbox"/> Marl Deposits (B15) (LRR U)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u><2 inches</u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Likely receives hydrology from Wetland 14.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-71-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across all Strata: _____ (B) Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)
2 _____				
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
_____ = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>				Prevalence Index worksheet Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column totals _____ (A) _____ (B) Prevalence Index = B/A = _____ Hydrophytic Vegetation Indicators: <input checked="" 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 <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				
1 <u>none</u>				
2 _____				
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
_____ = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)				
1 <u>Typha angustifolia</u>	<u>90</u>	<u>Y</u>	<u>OBL</u>	
2 <u>Juncus effusus</u>	<u>20</u>	<u>N</u>	<u>OBL</u>	
3 <u>Dicanthium spp.</u>	<u>10</u>	<u>N</u>		
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
9 _____				
10 _____				
11 _____				
12 _____				
_____ = Total Cover 50% of total cover <u>60</u> 20% of total cover: <u>24</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)				
1 <u>none</u>				
2 _____				
3 _____				
4 _____				
5 _____				
_____ = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>				

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes X No _____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: **04-WTL-71-wet**

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 ¹		
0-6	2.5Y	3 / 1	100					silt loam	
6-12	5Y	5 / 1	95	2.5Y	6 / 6	5		silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils ³ :		
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)			
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)			
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)			
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)			
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)			
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)				
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)				
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)				
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)				
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)				
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)				
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)				
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)					

³Indicators 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:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 10, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-71-upl
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 15%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.92550537 Long: -77.46173638 Datum: NAD-1983
 Soil Map Unit Name: Kempsville-Emporia-Remlik complex, 15 to 50 percent slopes NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	
Remarks: Upland data point on hillslope, Field Sheet 12-WTL13-Up1, Team A.			

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
	<u> </u> Sphagnum moss (D8) (LRR T, U)

Field Observations:	
Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe) Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	

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

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-71-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Pinus virginiana</u>	<u>30</u>	<u>Y</u>		Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</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>33.33%</u> (A)
2 <u>Pinus taeda</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
3 <u>Liriodendron tulipifera</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>	
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
<u>75</u> = Total Cover 50% of total cover <u>37.5</u> 20% of total cover: <u>15</u>				Prevalence Index worksheet 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>40</u> x 3 = <u>120</u> FACU species <u>25</u> x 4 = <u>100</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>65</u> (A) <u>220</u> (B) Prevalence Index = B/A = <u>3.38</u> Hydrophytic Vegetation Indicators: <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 <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Ilex opaca</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
2 <u>Quercus falcata</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
<u>20</u> = Total Cover 50% of total cover <u>10</u> 20% of total cover: <u>4</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>Smilax spp.</u>	<u>10</u>	<u>Y</u>		
2 _____				
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
9 _____				
10 _____				
11 _____				
12 _____				
<u>10</u> = Total Cover 50% of total cover <u>5</u> 20% of total cover: <u>2</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1 <u>none</u>				
2 _____				
3 _____				
4 _____				
5 _____				
<u>0</u> = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>				

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: **04-WTL-71-up1**

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 ¹	Loc2		
0-10	10YR 3 / 3	100					sandy loam	
10-15	10YR 4 / 4	100					clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 10, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-72-wet
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.92396776 Long: -77.46371562 Datum: NAD-1983
 Soil Map Unit Name: Kempsville-Emporia-Remlik complex, 15 to 50 percent slopes NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Railside ditch wetland. Field Sheet 12-WTL-11-Wet1, Team A. Note: No photos of this wetland.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u><2 inches</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Receives hydrology from wetland 12.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-72-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>none</u>				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					
5					
6					
7					
			<u>0</u> = Total Cover		
50% of total cover <u>0</u>			20% of total cover: <u>0</u>		
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet	
1 <u>Pinus taeda</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	Total % Cover of:	Multiply by:
2				OBL species <u>0</u>	x 1 = <u>0</u>
3				FACW species <u>5</u>	x 2 = <u>10</u>
4				FAC species <u>25</u>	x 3 = <u>75</u>
5				FACU species <u>0</u>	x 4 = <u>0</u>
6				UPL species <u>0</u>	x 5 = <u>0</u>
7				Column totals <u>30</u>	(A) <u>85</u> (B)
8				Prevalence Index = B/A = <u>2.83</u>	
9					
			<u>5</u> = Total Cover		
50% of total cover <u>2.5</u>			20% of total cover: <u>1</u>		
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:	
1 <u>Dichanthelium clandestinum</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	<input type="checkbox"/> 1 -Rapid Test for Hydrophytic Vegetation	
2 <u>Juncus effusus</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
3 <u>Carex spp.</u>	<u>5</u>	<u>N</u>		<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹	
4 <u>Scirpus spp.</u>	<u>5</u>	<u>N</u>		<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
6				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
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>		
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Definitions of Four Vegetation Strata:	
1 <u>none</u>				Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
2				Sapling/shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1m) tall.	
3				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
4				Woody vines - All woody vines greater than 3.28 ft in height.	
5					
			<u>0</u> = Total Cover		
50% of total cover <u>0</u>			20% of total cover: <u>0</u>		
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

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 ¹	Loc2		
0-5	5Y	4 / 1	95	2.5YR	5 / 8	5		sandy loam	
5-12	5Y	4 / 1	80	5YR	4 / 6	20		silty clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histisol (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 checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)
<input type="checkbox"/> 2 cm Mucky Mineral (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)	

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

Restrictive Layer (if observed):
 Type: clay
 Depth (inches): 5

Hydric soil present? Yes No

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-72-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>Pinus virginiana</u>	<u>10</u>	<u>Y</u>		Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)	
2 <u>Pinus taeda</u>	<u>10</u>	<u>Y</u>	FAC	Total Number of Dominant Species Across all Strata: <u>8</u> (B)	
3 <u>Liriodendron tulipifera</u>	<u>5</u>	<u>Y</u>	FACU	Percent of Dominant Species that are OBL, FACW, or FAC: <u>12.50%</u> (A/B)	
4 _____					
5 _____					
6 _____					
7 _____					
	<u>25</u>	= Total Cover			
	50% of total cover <u>12.5</u>		20% of total cover: <u>5</u>		
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet	
1 <u>Quercus velutina</u>	<u>20</u>	<u>Y</u>		Total % Cover of: Multiply by:	
2 <u>Liriodendron tulipifera</u>	<u>15</u>	<u>Y</u>	FACU	OBL species <u>0</u>	x 1 = <u>0</u>
3 <u>Quercus falcata</u>	<u>10</u>	<u>Y</u>	FACU	FACW species <u>0</u>	x 2 = <u>0</u>
4 _____				FAC species <u>10</u>	x 3 = <u>30</u>
5 _____				FACU species <u>30</u>	x 4 = <u>120</u>
6 _____				UPL species <u>0</u>	x 5 = <u>0</u>
7 _____				Column totals <u>40</u>	(A) <u>150</u> (B)
8 _____				Prevalence Index = B/A = <u>3.75</u>	
9 _____					
	<u>45</u>	= Total Cover			
	50% of total cover <u>22.5</u>		20% of total cover: <u>9</u>		
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:	
1 <u>Smilax spp.</u>	<u>50</u>	<u>Y</u>		<u> </u> 1 -Rapid Test for Hydrophytic Vegetation	
2 <u>Fern</u>	<u>15</u>	<u>Y</u>		<u> </u> 2 - Dominance Test is >50%	
3 _____				<u> </u> 3 - Prevalence Index is ≤3.0 ¹	
4 _____				<u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5 _____				<u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)	
6 _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
7 _____					
8 _____					
9 _____					
10 _____					
11 _____					
	<u>65</u>	= Total Cover			
	50% of total cover <u>32.5</u>		20% of total cover: <u>13</u>		
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Definitions of Four Vegetation Strata:	
1 <u>none</u>				Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
2 _____				Sapling/shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1m) tall.	
3 _____				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
4 _____				Woody vines - All woody vines greater than 3.28 ft in height.	
5 _____					
	<u>0</u>	= Total Cover			
	50% of total cover <u>0</u>		20% of total cover: <u>0</u>		
				Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	

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

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 10, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-73-wet
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.9241122 Long: -77.46383073 Datum: NAD-1983
 Soil Map Unit Name: Kempsville-Emporia-Remlik complex, 15 to 50 percent slopes NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Shrub scrub wetland. Field Sheet 12-WTL-12-Wet1, Team A. Note: No photographs of this wetland.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u><4 inches</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Hydrology connects to Wetland 11 via seep.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-73-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>Liriodendron tulipifera</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	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 _____					
5 _____					
6 _____					
7 _____					
	<u>5</u>	= Total Cover			
	50% of total cover <u>2.5</u>		20% of total cover: <u>1</u>		
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet	
1 <u>Acer rubrum</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	Total % Cover of: <u>15</u> x 1 = <u>15</u>	
2 <u>Alnus serrulata</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>	FACW species <u>5</u> x 2 = <u>10</u>	
3 _____				FAC species <u>32</u> x 3 = <u>96</u>	
4 _____				FACU species <u>95</u> x 4 = <u>380</u>	
5 _____				UPL species <u>0</u> x 5 = <u>0</u>	
6 _____				Column totals <u>147</u> (A) <u>501</u> (B)	
7 _____				Prevalence Index = B/A = <u>3.41</u>	
8 _____					
9 _____					
	<u>40</u>	= Total Cover			
	50% of total cover <u>20</u>		20% of total cover: <u>8</u>		
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:	
1 <u>Smilax glauca</u>	<u>90</u>	<u>Y</u>	<u>FACU</u>	<u>1</u> -Rapid Test for Hydrophytic Vegetation	
2 <u>Scirpus cyperinus</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	<u>2</u> - Dominance Test is >50%	
3 <u>Leersia oryzoides</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	<u>3</u> - Prevalence Index is ≤3.0 ¹	
4 <u>Pinus taeda</u>	<u>2</u>	<u>N</u>	<u>FAC</u>	<u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5 _____				<u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)	
6 _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
7 _____					
8 _____					
9 _____					
10 _____					
11 _____					
	<u>102</u>	= Total Cover		Definitions of Four Vegetation Strata:	
	50% of total cover <u>51</u>		20% of total cover: <u>20.4</u>	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 (1m) tall.	
				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
				Woody vines - All woody vines greater than 3.28 ft in height.	
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?	
1 <u>none</u>				Yes _____ No <u>X</u>	
2 _____					
3 _____					
4 _____					
5 _____					
	<u>0</u>	= Total Cover			
	50% of total cover <u>0</u>		20% of total cover: <u>0</u>		

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

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 ¹	Loc2		
0-5	5Y 5 / 1	100					sandy loam	fine sandy loam
5-15	5Y 5 / 2	90	10YR 5 / 6	10			sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Mucky Mineral (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 Soils³:

- 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)

³Indicators 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:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 10, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-73-upl
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 10%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.924112 Long: -77.463841 Datum: NAD-1983
 Soil Map Unit Name: Kempsville-Emporia-Remlik complex, 15 to 50 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u> X </u> Hydric Soil Present? Yes <u> </u> No <u> X </u> Wetland Hydrology Present? Yes <u> </u> No <u> X </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> X </u>
Remarks: Well drained hillslope upland data point. Field Sheet 12-WTL-12-Up1, Team A.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u> X </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-73-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>Pinus virginiana</u>	<u>10</u>	<u>Y</u>		Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)	
2 <u>Pinus taeda</u>	<u>10</u>	<u>Y</u>	FAC	Total Number of Dominant Species Across all Strata: <u>8</u> (B)	
3 <u>Liriodendron tulipifera</u>	<u>5</u>	<u>Y</u>	FACU	Percent of Dominant Species that are OBL, FACW, or FAC: <u>12.50%</u> (A/B)	
4 _____					
5 _____					
6 _____					
7 _____					
	<u>25</u> = Total Cover				
	50% of total cover <u>12.5</u>	20% of total cover: <u>5</u>			
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet	
1 <u>Quercus velutina</u>	<u>20</u>	<u>Y</u>		Total % Cover of: _____ Multiply by: _____	
2 <u>Liriodendron tulipifera</u>	<u>15</u>	<u>Y</u>	FACU	OBL species <u>0</u> x 1 = <u>0</u>	
3 <u>Quercus falcata</u>	<u>10</u>	<u>Y</u>	FACU	FACW species <u>0</u> x 2 = <u>0</u>	
4 _____				FAC species <u>10</u> x 3 = <u>30</u>	
5 _____				FACU species <u>30</u> x 4 = <u>120</u>	
6 _____				UPL species <u>0</u> x 5 = <u>0</u>	
7 _____				Column totals <u>40</u> (A) <u>150</u> (B)	
8 _____					
9 _____					
	<u>45</u> = Total Cover				
	50% of total cover <u>22.5</u>	20% of total cover: <u>9</u>			
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:	
1 <u>Smilax spp.</u>	<u>50</u>	<u>Y</u>		<u> </u> 1 -Rapid Test for Hydrophytic Vegetation	
2 <u>fern (branchy)</u>	<u>15</u>	<u>Y</u>		<u> </u> 2 - Dominance Test is >50%	
3 _____				<u> </u> 3 - Prevalence Index is ≤3.0 ¹	
4 _____				<u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5 _____				<u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)	
6 _____					
7 _____					
8 _____					
9 _____					
10 _____					
11 _____					
	<u>65</u> = Total Cover				
	50% of total cover <u>32.5</u>	20% of total cover: <u>13</u>			
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Definitions of Four Vegetation Strata:	
1 <u>none</u>				Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
2 _____				Sapling/shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1m) tall.	
3 _____				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
4 _____				Woody vines - All woody vines greater than 3.28 ft in height.	
5 _____					
	<u>0</u> = Total Cover				
	50% of total cover <u>0</u>	20% of total cover: <u>0</u>			
				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	

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

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 10, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-74-wet
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.9230766 Long: -77.46529794 Datum: NAD-1983
 Soil Map Unit Name: Kempsville-Emporia-Remlik complex, 15 to 50 percent slopes NWI classification: PEM/PSS

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Emergent shrub-scrub wetland. Field Sheet 12-WTL-10-Wet1, Team A.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u><4 inches</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Hydrology from WTL10 flows into WTL09.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-74-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:																																																	
1 <u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A)																																																	
2 _____				Total Number of Dominant Species Across all Strata: <u>7</u> (B)																																																	
3 _____				Percent of Dominant Species that are OBL, FACW, or FAC: <u>71.43%</u> (A/B)																																																	
4 _____																																																					
5 _____																																																					
6 _____																																																					
7 _____																																																					
	<u>10</u>	= Total Cover																																																			
	50% of total cover <u>5</u>		20% of total cover: <u>2</u>																																																		
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:40%;">Total % Cover of:</th> <th style="width:10%;"></th> <th style="width:10%;">Multiply by:</th> <th style="width:10%;"></th> <th style="width:10%;"></th> <th style="width:10%;"></th> </tr> </thead> <tbody> <tr> <td>OBL species</td> <td style="text-align:center;"><u>105</u></td> <td>x 1 =</td> <td style="text-align:center;"><u>105</u></td> <td></td> <td></td> </tr> <tr> <td>FACW species</td> <td style="text-align:center;"><u>10</u></td> <td>x 2 =</td> <td style="text-align:center;"><u>20</u></td> <td></td> <td></td> </tr> <tr> <td>FAC species</td> <td style="text-align:center;"><u>40</u></td> <td>x 3 =</td> <td style="text-align:center;"><u>120</u></td> <td></td> <td></td> </tr> <tr> <td>FACU species</td> <td style="text-align:center;"><u>3</u></td> <td>x 4 =</td> <td style="text-align:center;"><u>12</u></td> <td></td> <td></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> <td></td> <td></td> </tr> <tr> <td>Column totals</td> <td style="text-align:center;"><u>158</u></td> <td>(A)</td> <td style="text-align:center;"><u>257</u></td> <td>(B)</td> <td></td> </tr> <tr> <td colspan="4" style="text-align:right;">Prevalence Index = B/A =</td> <td style="text-align:center;"><u>1.63</u></td> <td></td> </tr> </tbody> </table>		Total % Cover of:		Multiply by:				OBL species	<u>105</u>	x 1 =	<u>105</u>			FACW species	<u>10</u>	x 2 =	<u>20</u>			FAC species	<u>40</u>	x 3 =	<u>120</u>			FACU species	<u>3</u>	x 4 =	<u>12</u>			UPL species	<u>0</u>	x 5 =	<u>0</u>			Column totals	<u>158</u>	(A)	<u>257</u>	(B)		Prevalence Index = B/A =				<u>1.63</u>	
Total % Cover of:		Multiply by:																																																			
OBL species	<u>105</u>	x 1 =	<u>105</u>																																																		
FACW species	<u>10</u>	x 2 =	<u>20</u>																																																		
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UPL species	<u>0</u>	x 5 =	<u>0</u>																																																		
Column totals	<u>158</u>	(A)	<u>257</u>			(B)																																															
Prevalence Index = B/A =						<u>1.63</u>																																															
1 <u>Alnus spp.</u>	<u>15</u>	<u>Y</u>																																																			
2 <u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>																																																		
3 <u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>																																																		
4 <u>Pinus taeda</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>																																																		
5 _____																																																					
6 _____																																																					
7 _____																																																					
8 _____																																																					
9 _____																																																					
	<u>45</u>	= Total Cover																																																			
	50% of total cover <u>22.5</u>		20% of total cover: <u>9</u>																																																		
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: <u> </u> 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 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic																																																	
1 <u>Leersia oryzoides</u>	<u>90</u>	<u>Y</u>	<u>OBL</u>																																																		
2 <u>Sphagnum spp.</u>	<u>70</u>	<u>Y</u>																																																			
3 <u>Eleocharis palustris</u>	<u>15</u>	<u>N</u>	<u>OBL</u>																																																		
4 <u>Scirpus cyperinus</u>	<u>5</u>	<u>N</u>	<u>FACW</u>																																																		
5 <u>Juncus effusus</u>	<u>5</u>	<u>N</u>	<u>FACW</u>																																																		
6 <u>Carex spp.</u>	<u>5</u>	<u>N</u>																																																			
7 <u>Ilex opaca</u>	<u>3</u>	<u>N</u>	<u>FACU</u>																																																		
8 _____																																																					
9 _____																																																					
10 _____																																																					
11 _____																																																					
	<u>193</u>	= Total Cover																																																			
	50% of total cover <u>96.5</u>		20% of total cover: <u>38.6</u>																																																		
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	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 (1m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height.																																																	
1 <u>none</u>																																																					
2 _____																																																					
3 _____																																																					
4 _____																																																					
5 _____																																																					
	<u>0</u>	= Total Cover																																																			
	50% of total cover <u>0</u>		20% of total cover: <u>0</u>																																																		
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																																																	

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-74-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 5

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-74-wet View of wetland



04-WTL-74-wet View of wetland



04-WTL-74-wet Inundated portion of wetland



04-WTL-74-wet Wetland soil core



04-WTL-74-wet Soil core from inundated portion of wetland



04-WTL-74-wet Upland soil core

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-74-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>Pinus virginiana</u>	<u>30</u>	<u>Y</u>		Number of Dominant Species That Are OBL, FACW, or FAC:	<u>3</u> (A)
2 <u>Pinus taeda</u>	<u>15</u>	<u>Y</u>	FAC	Total Number of Dominant Species Across all Strata:	<u>6</u> (B)
3 <u>Quercus palustris</u>	<u>10</u>	<u>N</u>	FACW	Percent of Dominant Species that are OBL, FACW, or FAC:	<u>50.00%</u> (A/B)
4 _____					
5 _____					
6 _____					
7 _____					
	<u>55</u>	= Total Cover			
	50% of total cover <u>27.5</u>		20% of total cover: <u>11</u>		
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet	
1 <u>none</u>				Total % Cover of:	Multiply by:
2 _____				OBL species <u>0</u>	x 1 = <u>0</u>
3 _____				FACW species <u>15</u>	x 2 = <u>30</u>
4 _____				FAC species <u>20</u>	x 3 = <u>60</u>
5 _____				FACU species <u>5</u>	x 4 = <u>20</u>
6 _____				UPL species <u>0</u>	x 5 = <u>0</u>
7 _____				Column totals <u>40</u>	(A) <u>110</u> (B)
8 _____				Prevalence Index = B/A = <u>2.75</u>	
9 _____				Hydrophytic Vegetation Indicators:	
	<u>0</u>	= Total Cover		<u> </u> 1 -Rapid Test for Hydrophytic Vegetation	
	50% of total cover <u>0</u>		20% of total cover: <u>0</u>	<u> </u> 2 - Dominance Test is >50%	
				<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹	
				<u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
				<u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)	
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Definitions of Four Vegetation Strata:	
1 <u>Pinus taeda</u>	<u>5</u>	<u>Y</u>	FAC	Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
2 <u>Fagus spp.</u>	<u>5</u>	<u>Y</u>		Sapling/shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1m) tall.	
3 <u>Quercus palustris</u>	<u>5</u>	<u>Y</u>	FACW	Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
4 <u>Andropogon virginicus</u>	<u>5</u>	<u>Y</u>	FACU	Woody vines - All woody vines greater than 3.28 ft in height.	
5 _____					
6 _____					
7 _____					
8 _____					
9 _____					
10 _____					
11 _____					
	<u>20</u>	= Total Cover			
	50% of total cover <u>10</u>		20% of total cover: <u>4</u>		
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
1 _____					
2 _____					
3 _____					
4 _____					
5 _____					
	<u>0</u>	= Total Cover			
	50% of total cover <u>0</u>		20% of total cover: <u>0</u>		

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

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 10, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-75-wet
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.92280694 Long: -77.46490586 Datum: NAD-1983
 Soil Map Unit Name: Kempsville-Emporia-Remlik complex, 15 to 50 percent slopes NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation X, Soil , or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes No X
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Emergent wetland from seep. Wetland is disturbed by pipeline corridor activity. Tire tracks and clear cutting. Field Sheet 12-WTL-07-Wet1, Team A.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u><2 inches</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? (includes capillary fringe) Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u>	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Fed by hillside seep.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-75-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
1 <u>none</u>				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across all Strata: _____ (B) Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)	
2 _____					
3 _____					
4 _____					
5 _____					
6 _____					
7 _____					
_____ = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>				Prevalence Index worksheet Total % Cover of: Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column totals _____ (A) _____ (B) Prevalence Index = B/A = _____	
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
1 <u>none</u>					
2 _____					
3 _____					
4 _____					
5 _____					
6 _____					
7 _____					
8 _____					
9 _____					
_____ = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>				Hydrophytic Vegetation Indicators: <input checked="" 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 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
1 <u>Leersia oryzoides</u>	<u>90</u>	<u>Y</u>	<u>OBL</u>		
2 <u>Dicanthium spp.</u>	<u>10</u>	<u>N</u>			
3 <u>Scirpus georgianus</u>	<u>10</u>	<u>N</u>	<u>OBL</u>		
4 <u>Juncus effusus</u>	<u>10</u>	<u>N</u>	<u>FACW</u>		
5 <u>Glyceria striata</u>	<u>10</u>	<u>N</u>	<u>OBL</u>		
6 <u>Carex spp.</u>	<u>10</u>	<u>N</u>			
7 <u>Sphagnum spp.</u>	<u>5</u>	<u>N</u>			
8 <u>Eupatorium spp.</u>	<u>5</u>	<u>N</u>			
9 _____					
10 _____					
11 _____					
_____ = Total Cover 50% of total cover <u>75</u> 20% of total cover: <u>30</u>				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 (1m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height.	
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
1 <u>none</u>					
2 _____					
3 _____					
4 _____					
5 _____					
_____ = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	

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

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 ¹	Loc2		
0-6	2.5Y 2.5 / 2	100					sandy loam	fine sandy loam
6-15+	Gley 2 3 / 10B	95	5Y 5 / 1	5			sandy loam	Coarse sandy loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Mucky Mineral (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 Soils³:

- 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)

³Indicators 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: **Soils are in disturbed pipeline corridor.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-75-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	0	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	0	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	0	

Total Score 1

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-75-wet Wetland in gas ROW



04-WTL-75-wet Wetland in gas ROW



04-WTL-75-wet Wetland in gas ROW



04-WTL-75-wet Wetland in gas ROW



04-WTL-75-wet Wetland in gas ROW



04-WTL-75-wet Wetland soil core

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 10, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-75-upl
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 4%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.92289894 Long: -77.46485977 Datum: NAD-1983
 Soil Map Unit Name: Kempsville-Emporia-Remlik complex, 15 to 50 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? no Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? no (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 <u> </u> No <u> X </u> Hydric Soil Present? Yes <u> </u> No <u> X </u> Wetland Hydrology Present? Yes <u> </u> No <u> X </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> X </u>
Remarks: This is a moderately well drained upland data point. Field Sheet 12-WTL-07-Up1, Team A.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u> X </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-75-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>Pinus taeda</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>3</u> (A)
2 <u>Pinus virginiana</u>	<u>15</u>	<u>Y</u>		Total Number of Dominant Species Across all Strata:	<u>4</u> (B)
3 <u>Juniperus virginiana</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	Percent of Dominant Species that are OBL, FACW, or FAC:	<u>75.00%</u> (A/B)
4 _____					
5 _____					
6 _____					
7 _____					
	<u>35</u> = Total Cover				
	50% of total cover <u>17.5</u>	20% of total cover: <u>7</u>			
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet	
1 <u>Liquidambar styraciflua</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	Total % Cover of:	Multiply by:
2 <u>Pinus taeda</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	OBL species <u>0</u> x 1 = <u>0</u>	
3 _____				FACW species <u>0</u> x 2 = <u>0</u>	
4 _____				FAC species <u>40</u> x 3 = <u>120</u>	
5 _____				FACU species <u>5</u> x 4 = <u>20</u>	
6 _____				UPL species <u>0</u> x 5 = <u>0</u>	
7 _____				Column totals <u>45</u> (A) <u>140</u> (B)	
8 _____					
9 _____					
	<u>25</u> = Total Cover				
	50% of total cover <u>12.5</u>	20% of total cover: <u>5</u>			
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:	
1 <u>none</u>				<input type="checkbox"/> 1 -Rapid Test for Hydrophytic Vegetation	
2 _____				<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
3 _____				<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹	
4 _____				<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5 _____				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
6 _____					
7 _____					
8 _____					
9 _____					
10 _____					
11 _____					
	<u>0</u> = Total Cover			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
	50% of total cover <u>0</u>	20% of total cover: <u>0</u>		Definitions of Four Vegetation Strata:	
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
1 <u>Smilax spp.</u>	<u>1</u>	<u>N</u>		Sapling/shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1m) tall.	
2 _____				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
3 _____				Woody vines - All woody vines greater than 3.28 ft in height.	
4 _____					
5 _____					
	<u>1</u> = Total Cover			Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
	50% of total cover <u>0.5</u>	20% of total cover: <u>0.2</u>			
Remarks: (Include photo numbers here or on a separate sheet.)					

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 10, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-76-wet
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 5%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.92284366 Long: -77.46534486 Datum: NAD-1983
 Soil Map Unit Name: Kempsville-Emporia-Remlik complex, 15 to 50 percent slopes NWI classification: PEM/PSS

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> X </u> No <u> </u> Hydric Soil Present? Yes <u> X </u> No <u> </u> Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u>
Remarks: Railside ditch wetland. Field Sheet 12-WTL-09-Wet1, Team A.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> X </u> No <u> </u> Depth (inches): <u><2 inches</u> Water table present? Yes <u> X </u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u> X </u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> X </u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Seep water.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-76-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
1 <u>none</u>					
2					
3					
4					
5					
6					
7					
	<u>0</u>	= Total Cover			
	50% of total cover <u>0</u>	20% of total cover: <u>0</u>			
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)					
1 <u>Alnus spp.</u>	<u>40</u>	<u>Y</u>			
2					
3					
4					
5					
6					
7					
8					
9					
	<u>40</u>	= Total Cover			
	50% of total cover <u>20</u>	20% of total cover: <u>8</u>			
Herb Stratum (Plot Size: <u>5' radius</u>)					
1 <u>Leersia oryzoides</u>	<u>80</u>	<u>Y</u>	<u>OBL</u>		
2 <u>Dicanthium spp.</u>	<u>10</u>	<u>N</u>			
3 <u>Juncus effusus</u>	<u>5</u>	<u>N</u>	<u>FACW</u>		
4 <u>Scirpus cyperinus</u>	<u>5</u>	<u>N</u>	<u>FACW</u>		
5 <u>Scirpus spp.</u>	<u>5</u>	<u>N</u>			
6					
7					
8					
9					
10					
11					
	<u>105</u>	= Total Cover			
	50% of total cover <u>52.5</u>	20% of total cover: <u>21</u>			
Woody Vine Stratum (Plot Size: <u>30' radius</u>)					
1 <u>none</u>					
2					
3					
4					
5					
	<u>0</u>	= Total Cover			
	50% of total cover <u>0</u>	20% of total cover: <u>0</u>			

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: _____ (B)

Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column totals _____	(A) _____ (B) _____

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

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 ¹	Loc2		
0-4	7.5YR 2.5 / 1	100					sandy loam	
4-6	2.5Y 6 / 4	100					sandy loam	
6-12	5Y 6 / 1	95	7.5YR 6 / 8	5			sandy clay loam	very sandy loam clay

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Mucky Mineral (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 Soils³:

- 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)

³Indicators 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: **Black sand present.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-76-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	0	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	0	

Total Score 2

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-76-wet Herbaceous vegetation.



04-WTL-76-wet Wetland habitat.



04-WTL-76-wet View near ballast.



04-WTL-76-wet Wetland soil core

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 10, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-76-upl
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 10%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.92292938 Long: -77.46543734 Datum: NAD-1983
 Soil Map Unit Name: Kempsville-Emporia-Remlik complex, 15 to 50 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> X </u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u> X </u> Wetland Hydrology Present? Yes <u> </u> No <u> X </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> X </u>
Remarks: Upland data point near ballast. Field Sheet 12-WTL-09-Up1, Team A.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u> X </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-76-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>Pinus virginiana</u>	<u>30</u>	<u>Y</u>		Number of Dominant Species That Are OBL, FACW, or FAC:	<u>3</u> (A)
2 <u>Pinus taeda</u>	<u>15</u>	<u>Y</u>	FAC	Total Number of Dominant Species Across all Strata:	<u>6</u> (B)
3 <u>Quercus palustris</u>	<u>10</u>	<u>N</u>	FACW	Percent of Dominant Species that are OBL, FACW, or FAC:	<u>50.00%</u> (A/B)
4 _____					
5 _____					
6 _____					
7 _____					
	<u>55</u>	= Total Cover			
	50% of total cover <u>27.5</u>	20% of total cover: <u>11</u>			
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet	
1 <u>none</u>				Total % Cover of:	Multiply by:
2 _____				OBL species <u>0</u>	x 1 = <u>0</u>
3 _____				FACW species <u>15</u>	x 2 = <u>30</u>
4 _____				FAC species <u>20</u>	x 3 = <u>60</u>
5 _____				FACU species <u>5</u>	x 4 = <u>20</u>
6 _____				UPL species <u>0</u>	x 5 = <u>0</u>
7 _____				Column totals <u>40</u>	(A) <u>110</u> (B)
8 _____					
9 _____					
	<u>0</u>	= Total Cover		Prevalence Index = B/A = <u>2.75</u>	
	50% of total cover <u>0</u>	20% of total cover: <u>0</u>			
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:	
1 <u>Pinus taeda</u>	<u>5</u>	<u>Y</u>	FAC	<input type="checkbox"/> 1 -Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
2 <u>Fagus spp.</u>	<u>5</u>	<u>Y</u>		¹ 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 (1m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height.	
3 <u>Quercus palustris</u>	<u>5</u>	<u>Y</u>	FACW		
4 <u>Andropogon virginicus</u>	<u>5</u>	<u>Y</u>	FACU		
5 _____					
6 _____					
7 _____					
8 _____					
9 _____					
10 _____					
11 _____					
	<u>20</u>	= Total Cover			
	50% of total cover <u>10</u>	20% of total cover: <u>4</u>			
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
1 _____					
2 _____					
3 _____					
4 _____					
5 _____					
	<u>0</u>	= Total Cover			
	50% of total cover <u>0</u>	20% of total cover: <u>0</u>			

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

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 10, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-77-wet
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 3
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.921871 Long: -77.466024 Datum: NAD-1983
 Soil Map Unit Name: Kempsville-Emporia complex, 6 to 10 percent slopes NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation X, Soil , or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Emergent wetland fed by hillside seep. Wetland is greatly disturbed by pipeline activity. Vegetation has been removed in sections, large ruts and tire tracks present. Field Sheet 12-WTL-06-Wet1, Team A.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u><2 inches</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Seep from adjacent hillside feeds wetland. Eventually flows to Stream 7.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-77-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>none</u>				Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)	
2 _____				Total Number of Dominant Species Across all Strata: _____ (B)	
3 _____				Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)	
4 _____					
5 _____					
6 _____					
7 _____					
	<u>0</u>	= Total Cover			
	50% of total cover <u>0</u>	20% of total cover: <u>0</u>			
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet	
1 <u>none</u>				Total % Cover of: _____ Multiply by: _____	
2 _____				OBL species _____ x 1 = _____	
3 _____				FACW species _____ x 2 = _____	
4 _____				FAC species _____ x 3 = _____	
5 _____				FACU species _____ x 4 = _____	
6 _____				UPL species _____ x 5 = _____	
7 _____				Column totals _____ (A) _____ (B)	
8 _____				Prevalence Index = B/A = _____	
9 _____					
	<u>0</u>	= Total Cover			
	50% of total cover <u>0</u>	20% of total cover: <u>0</u>			
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:	
1 <u>Carex spp.</u>	<u>10</u>	<u>Y</u>		<input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation	
2 <u>Eupatorium spp.</u>	<u>10</u>	<u>Y</u>		<input type="checkbox"/> 2 - Dominance Test is >50%	
3 <u>Scirpus georgianus</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>	<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹	
4 <u>Juncus effusus</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5 <u>Glyceria striata</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
6 <u>Sphagnum spp.</u>	<u>10</u>	<u>Y</u>		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
7 _____				Definitions of Four Vegetation Strata:	
8 _____				Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
9 _____				Sapling/shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1m) tall.	
10 _____				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
11 _____				Woody vines - All woody vines greater than 3.28 ft in height.	
	<u>60</u>	= Total Cover			
	50% of total cover <u>30</u>	20% of total cover: <u>12</u>			
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?	
1 <u>none</u>				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
2 _____					
3 _____					
4 _____					
5 _____					
	<u>0</u>	= Total Cover			
	50% of total cover <u>0</u>	20% of total cover: <u>0</u>			
Remarks: (Include photo numbers here or on a separate sheet.)					

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-77-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	0	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	0	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	0	

Total Score 1

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-77-wet View of wetland in gas ROW



04-WTL-77-wet Wetland in gas ROW



04-WTL-77-wet Wetland in gas ROW



04-WTL-77-wet Wetland soil core



04-WTL-77-wet View of upland in gas ROW



04-WTL-77-wet Upland soil core

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 10, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-77-upl
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): sloped Slope (%): 5%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.922009 Long: -77.465841 Datum: NAD-1983
 Soil Map Unit Name: Kempsville-Emporia-Remlik complex, 15 to 50 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil X, or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Upland area on hillside that is disturbed from equipment ruts. Field Sheet 12-WTL-06-Up1, Team A.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-77-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>Pinus taeda</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)	
2 <u>Liriodendron tulipifera</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>	Total Number of Dominant Species Across all Strata: <u>12</u> (B)	
3 <u>Pinus virginiana</u>	<u>10</u>	<u>Y</u>		Percent of Dominant Species that are OBL, FACW, or FAC: <u>25.00%</u> (A/B)	
4 <u>Fagus spp.</u>	<u>10</u>	<u>Y</u>			
5 _____					
6 _____					
7 _____					
	<u>50</u>	= Total Cover			
	50% of total cover <u>25</u>		20% of total cover: <u>10</u>		
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet	
1 <u>Pinus taeda</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	Total % Cover of: _____ Multiply by: _____	
2 <u>Liriodendron tulipifera</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	OBL species <u>0</u>	x 1 = <u>0</u>
3 <u>Quercus velutina</u>	<u>10</u>	<u>Y</u>		FACW species <u>0</u>	x 2 = <u>0</u>
4 <u>Quercus falcata</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	FAC species <u>30</u>	x 3 = <u>90</u>
5 _____				FACU species <u>40</u>	x 4 = <u>160</u>
6 _____				UPL species <u>0</u>	x 5 = <u>0</u>
7 _____				Column totals <u>70</u>	(A) <u>250</u> (B)
8 _____				Prevalence Index = B/A = <u>3.57</u>	
9 _____					
	<u>40</u>	= Total Cover			
	50% of total cover <u>20</u>		20% of total cover: <u>8</u>		
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:	
1 <u>Quercus spp.</u>	<u>5</u>	<u>Y</u>		<u> </u> 1 -Rapid Test for Hydrophytic Vegetation	
2 <u>Pinus virginiana</u>	<u>5</u>	<u>Y</u>		<u> </u> 2 - Dominance Test is >50%	
3 <u>Pinus taeda</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	<u> </u> 3 - Prevalence Index is ≤3.0 ¹	
4 <u>Quercus falcata</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	<u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5 _____				<u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)	
6 _____					
7 _____					
8 _____					
9 _____					
10 _____					
11 _____					
	<u>20</u>	= Total Cover			
	50% of total cover <u>10</u>		20% of total cover: <u>4</u>		
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Definitions of Four Vegetation Strata:	
1 <u>none</u>				Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
2 _____				Sapling/shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1m) tall.	
3 _____				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
4 _____				Woody vines - All woody vines greater than 3.28 ft in height.	
5 _____					
	<u>0</u>	= Total Cover			
	50% of total cover <u>0</u>		20% of total cover: <u>0</u>		
				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	

Remarks: (Include photo numbers here or on a separate sheet.)
Lots of pine needles.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 10, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-78-wet
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression/terrace Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.91573883 Long: -77.46891223 Datum: NAD-1983
 Soil Map Unit Name: Bibb-Chastain complex, 0 to 2 percent slopes, frequently flooded NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is a small herbaceous emergent wetland. Field Sheet 12-WTL-05-Wet1, Team A.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u><6 inches</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-78-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>none</u>				Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A)	
2				Total Number of Dominant Species Across all Strata: <u>7</u> (B)	
3				Percent of Dominant Species that are OBL, FACW, or FAC: <u>71.43%</u> (A/B)	
4					
5					
6					
7					
50% of total cover <u>0</u>			= Total Cover <u>0</u>		
20% of total cover: <u>0</u>					
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet	
1 <u>Liquidambar styraciflua</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	Total % Cover of: <u>30</u> x 1 = <u>30</u>	
2				FACW species <u>10</u> x 2 = <u>20</u>	
3				FAC species <u>5</u> x 3 = <u>15</u>	
4				FACU species <u>0</u> x 4 = <u>0</u>	
5				UPL species <u>0</u> x 5 = <u>0</u>	
6				Column totals <u>45</u> (A) <u>65</u> (B)	
7					
8					
9					
50% of total cover <u>2.5</u>			= Total Cover <u>5</u>		
20% of total cover: <u>1</u>					
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:	
1 <u>Carex vulpinoidea</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>	<input type="checkbox"/> 1 -Rapid Test for Hydrophytic Vegetation	
2 <u>Carex lurida</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>	<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
3 <u>Dicanthilium clandestinum</u>	<u>10</u>	<u>Y</u>		<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹	
4 <u>Juncus effusus</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5 <u>Polygonum sagittatum</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
6 <u>Carex spp. (submerged)</u>	<u>10</u>	<u>Y</u>		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
7					
8					
9					
10					
11					
50% of total cover <u>30</u>			= Total Cover <u>60</u>		
20% of total cover: <u>12</u>					
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Definitions of Four Vegetation Strata:	
1 <u>none</u>				Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
2				Sapling/shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1m) tall.	
3				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
4				Woody vines - All woody vines greater than 3.28 ft in height.	
5					
50% of total cover <u>0</u>			= Total Cover <u>0</u>		
20% of total cover: <u>0</u>					
				Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: (Include photo numbers here or on a separate sheet.)					

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 ¹	Loc2		
0-3	10YR 5 / 2	70	10YR 6 / 8	30			sandy loam	coarse sandy loam
3-15	10YR 5 / 1	100					sand	Coarse sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Mucky Mineral (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 Soils³:

- 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)

³Indicators 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: **Very gray, sandy soils.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-78-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	3	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 9

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-78-wet Close view of inundated portion of wetland



04-WTL-78-wet View of wetland



04-WTL-78-wet Wetland in gas ROW



04-WTL-78-wet Wetland soil core



04-WTL-78-wet Culvert 10 - metal 5 ft diameter drains into wetland, gas ROW.



04-WTL-78-wet View of upland area

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-78-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:			
1 <u>Pinus taeda</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)			
2 <u>Liriodendron tulipifera</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>	Total Number of Dominant Species Across all Strata: <u>10</u> (B)			
3 <u>Pinus virginiana</u>	<u>10</u>	<u>Y</u>		Percent of Dominant Species that are OBL, FACW, or FAC: <u>20.00%</u> (A/B)			
4 <u>Fagus spp.</u>	<u>10</u>	<u>Y</u>					
5 _____							
6 _____							
7 _____							
	<u>50</u>	= Total Cover					
	50% of total cover <u>25</u>		20% of total cover: <u>10</u>				
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet			
1 <u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>			Total % Cover of: Multiply by:	
2 <u>Quercus spp.</u>	<u>10</u>	<u>Y</u>				OBL species <u>0</u> x 1 = <u>0</u>	
3 <u>Fagus spp.</u>	<u>10</u>	<u>Y</u>				FACW species <u>0</u> x 2 = <u>0</u>	
4 <u>Quercus falcata</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>			FAC species <u>25</u> x 3 = <u>75</u>	
5 _____						FACU species <u>25</u> x 4 = <u>100</u>	
6 _____						UPL species <u>0</u> x 5 = <u>0</u>	
7 _____						Column totals <u>50</u> (A) <u>175</u> (B)	
8 _____						Prevalence Index = B/A = <u>3.50</u>	
9 _____							
	<u>40</u>	= Total Cover					
	50% of total cover <u>20</u>		20% of total cover: <u>8</u>				
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:			
1 <u>Smilax spp.</u>	<u>5</u>	<u>Y</u>				<input type="checkbox"/> 1 -Rapid Test for Hydrophytic Vegetation	
2 <u>Pinus spp.</u>	<u>5</u>	<u>Y</u>				<input type="checkbox"/> 2 - Dominance Test is >50%	
3 _____						<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹	
4 _____						<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5 _____						<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
6 _____						¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
7 _____							
8 _____							
9 _____							
10 _____							
11 _____							
	<u>10</u>	= Total Cover					
	50% of total cover <u>5</u>		20% of total cover: <u>2</u>				
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Definitions of Four Vegetation Strata:			
1 <u>none</u>						Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
2 _____						Sapling/shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1m) tall.	
3 _____						Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
4 _____						Woody vines - All woody vines greater than 3.28 ft in height.	
5 _____							
	<u>0</u>	= Total Cover					
	50% of total cover <u>0</u>		20% of total cover: <u>0</u>				
				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>			

Remarks: (Include photo numbers here or on a separate sheet.)
Lots of pine needles.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 9, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-79-wet
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.91214361 Long: -77.46903875 Datum: NAD-1983
 Soil Map Unit Name: Kempsville-Emporia-Remlik complex, 15 to 50 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> X </u> No <u> </u> Hydric Soil Present? Yes <u> X </u> No <u> </u> Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u>
Remarks: Wetland drains into small culvert. Field Sheet 12-WTL-04-Wet1, Team A.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> X </u> No <u> </u> Depth (inches): <u><2 inches</u> Water table present? Yes <u> X </u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u> X </u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> X </u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Seep water from adjacent hillside.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-79-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:			
1 <u>Liquidambar styraciflua</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)			
2 <u>Liriodendron tulipifera</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>	Total Number of Dominant Species Across all Strata: <u>8</u> (B)			
3 _____				Percent of Dominant Species that are OBL, FACW, or FAC: <u>25.00%</u> (A/B)			
4 _____							
5 _____							
6 _____							
7 _____							
50% of total cover <u>30</u>			<u>60</u> = Total Cover				
20% of total cover: <u>12</u>							
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet			
1 <u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>			Total % Cover of: _____ Multiply by: _____	
2 <u>Quercus spp.</u>	<u>5</u>	<u>Y</u>				OBL species <u>0</u> x 1 = <u>0</u>	
3 <u>Fagus spp.</u>	<u>5</u>	<u>Y</u>				FACW species <u>0</u> x 2 = <u>0</u>	
4 <u>Carpinus caroliniana</u>	<u>2</u>	<u>N</u>	<u>FAC</u>			FAC species <u>42</u> x 3 = <u>126</u>	
5 _____						FACU species <u>35</u> x 4 = <u>140</u>	
6 _____						UPL species <u>0</u> x 5 = <u>0</u>	
7 _____						Column totals <u>77</u> (A) <u>266</u> (B)	
8 _____						Prevalence Index = B/A = <u>3.45</u>	
9 _____							
50% of total cover <u>11</u>			<u>22</u> = Total Cover				
20% of total cover: <u>4.4</u>							
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:			
1 <u>Carex spp.</u>	<u>10</u>	<u>Y</u>				<input type="checkbox"/> 1 -Rapid Test for Hydrophytic Vegetation	
2 <u>Ilex opaca</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>			<input type="checkbox"/> 2 - Dominance Test is >50%	
3 <u>Lonicera spp.</u>	<u>5</u>	<u>Y</u>				<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹	
4 _____						<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5 _____						<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
6 _____						¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
7 _____						Definitions of Four Vegetation Strata:	
8 _____						Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
9 _____						Sapling/shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1m) tall.	
10 _____						Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
11 _____				Woody vines - All woody vines greater than 3.28 ft in height.			
50% of total cover <u>10</u>			<u>20</u> = Total Cover				
20% of total cover: <u>4</u>							
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>			
1 <u>none</u>							
2 _____							
3 _____							
4 _____							
5 _____							
50% of total cover <u>0</u>			<u>0</u> = Total Cover				
20% of total cover: <u>0</u>							

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

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 ¹	Loc2		
0-8	5Y 4 / 2	100	7.5YR 5 / 7	5			silty clay loam	
8-10	5Y 3 / 1	100					silt loam	
10-15	2.5Y 3 / 1	100					sandy clay loam	fine sand, very dark

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Mucky Mineral (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 Soils³:

- 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)

³Indicators 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: **Mucky layer present 10-15+, very dark soil.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-79-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 5

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-79-wet View of forested wetland



04-WTL-79-wet View of forested wetland



04-WTL-79-wet View of forested wetland



04-WTL-79-wet Wetland soil core



04-WTL-79-wet View of upland



04-WTL-79-wet View of upland forest

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 9, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-79-upl
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 2
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.91576645 Long: -77.4690026 Datum: NAD-1983
 Soil Map Unit Name: Stagle-Kempsville complex, 2 to 15 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u> X </u> Hydric Soil Present? Yes <u> </u> No <u> X </u> Wetland Hydrology Present? Yes <u> </u> No <u> X </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> X </u>
Remarks: This is a well drained upland point. Field Sheet 12-WTL-04-Up1, Team A.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u> X </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-79-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status																														
1 <u>Pinus taeda</u>	<u>1</u>	<u>No</u>	<u>FAC</u>	Dominance Test worksheet: 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)																													
2 <u>Pinus virginiana</u>	<u>1</u>	<u>No</u>																															
3																																	
4																																	
5																																	
6																																	
7																																	
<u>2</u> = Total Cover 50% of total cover <u>1</u> 20% of total cover: <u>0.4</u>				Prevalence Index worksheet <table style="width:100%; border:none;"> <tr> <td style="width:50%;"></td> <td style="text-align:center;">Total % Cover of:</td> <td style="width:50%;"></td> <td style="text-align:center;">Multiply by:</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>1</u></td> <td>x 3 =</td> <td style="text-align:center;"><u>3</u></td> </tr> <tr> <td>FACU species</td> <td style="text-align:center;"><u>1</u></td> <td>x 4 =</td> <td style="text-align:center;"><u>4</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>2</u></td> <td>(A)</td> <td style="text-align:center;"><u>7</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.50</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>1</u>	x 3 =	<u>3</u>	FACU species	<u>1</u>	x 4 =	<u>4</u>	UPL species	<u>0</u>	x 5 =	<u>0</u>	Column totals	<u>2</u>	(A)	<u>7</u> (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>1</u>	x 3 =	<u>3</u>																														
FACU species	<u>1</u>	x 4 =	<u>4</u>																														
UPL species	<u>0</u>	x 5 =	<u>0</u>																														
Column totals	<u>2</u>	(A)	<u>7</u> (B)																														
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status																														
1 <u>Liriodendron tulipifera</u>	<u>1</u>	<u>No</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <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 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)																													
2																																	
3																																	
4																																	
5																																	
6																																	
7																																	
8																																	
9																																	
<u>1</u> = Total Cover 50% of total cover <u>0.5</u> 20% of total cover: <u>0.2</u>				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 (1m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height.																													
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status																														
1 <u>Smilax spp.</u>	<u>5</u>	<u>Y</u>				Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>																											
2																																	
3																																	
4																																	
5																																	
6																																	
7																																	
8																																	
9																																	
10																																	
11																																	
<u>5</u> = Total Cover 50% of total cover <u>2.5</u> 20% of total cover: <u>1</u>																																	
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status																														
1 <u>none</u>				Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>																													
2																																	
3																																	
4																																	
5																																	
<u>0</u> = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>																																	

Remarks: (Include photo numbers here or on a separate sheet.) **Upland point was mostly lacking vegetation.**

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 ¹	Loc2		
0-8	10YR 5 / 6	100					sandy loam	
8-15+	10YR 5 / 6	100					silty clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

- | | |
|--|---|
| Hydric Soil Indicators: | Indicators for Problematic Hydric Soils³: |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> 2 cm Muck (A10) (MLRA 147) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Coast Prairie Redox (A16) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> (MLRA 147,148) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) |
| <input type="checkbox"/> 2 cm Mucky Mineral (A10) (LRR N) | <input type="checkbox"/> (MLRA 136, 147) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Other (Explain in Remarks) |
| <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 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) | |

³Indicators 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 **X** _____

Remarks: **2 inches of dark organic material at the top. 8+ inches of hard clay present.**

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Caroline County Sampling Date: December 9, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-80-wet
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.8993034 Long: -77.46523546 Datum: NAD-1983
 Soil Map Unit Name: Stagle-Kempsville complex, 2 to 15 percent slopes NWI classification: PEM/PSS

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Wetland area is located in raiiside ditch at foot of hillslope. Field Sheet 12-WTL-03-Wet1, Team A.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>3</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Railside ditch.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-80-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>none</u>				Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</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>0.00%</u> (A/B)	
4					
5					
6					
7					
0 = Total Cover 50% of total cover <u>0</u> 20% of total cover: <u>0</u>				Prevalence Index worksheet	
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)				Total % Cover of:	Multiply by:
1 <u>Pinus taeda</u>	<u>1</u>	<u>N</u>	<u>FAC</u>	OBL species <u>20</u>	x 1 = <u>20</u>
2 <u>Liquidambar styraciflua</u>	<u>1</u>	<u>N</u>	<u>FAC</u>	FACW species <u>0</u>	x 2 = <u>0</u>
3				FAC species <u>2</u>	x 3 = <u>6</u>
4				FACU species <u>0</u>	x 4 = <u>0</u>
5				UPL species <u>0</u>	x 5 = <u>0</u>
6				Column totals <u>22</u>	(A) <u>26</u> (B)
7				Prevalence Index = B/A = <u>1.18</u>	
8				Hydrophytic Vegetation Indicators:	
9				<u> </u> 1 -Rapid Test for Hydrophytic Vegetation	
2 = Total Cover				<u> </u> 2 - Dominance Test is >50%	
50% of total cover <u>1</u> 20% of total cover: <u>0.4</u>				<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹	
Herb Stratum (Plot Size: <u>5' radius</u>)				<u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
1 <u>Scirpus spp.</u>	<u>60</u>	<u>Y</u>		<u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)	
2 <u>Sphagnum spp.</u>	<u>50</u>	<u>Y</u>		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
3 <u>Carex spp.</u>	<u>10</u>	<u>N</u>		Definitions of Four Vegetation Strata:	
4 <u>Scirpus georgianus</u>	<u>10</u>	<u>N</u>	<u>OBL</u>	Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
5 <u>Eleocharis obtusa</u>	<u>10</u>	<u>N</u>	<u>OBL</u>	Sapling/shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1m) tall.	
6				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
7				Woody vines - All woody vines greater than 3.28 ft in height.	
8					
9					
10					
11					
140 = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
50% of total cover <u>70</u> 20% of total cover: <u>28</u>					
Woody Vine Stratum (Plot Size: <u>30' radius</u>)					
1 <u>none</u>					
2					
3					
4					
5					
0 = Total Cover					
50% of total cover <u>0</u> 20% of total cover: <u>0</u>					
Remarks: (Include photo numbers here or on a separate sheet.)					

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-80-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 5

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-80-wet View of railside ditch wetland



04-WTL-80-wet View of railside ditch wetland



04-WTL-80-wet View of railside ditch wetland



04-WTL-80-wet Photo description.



04-WTL-80-wet View of upland area



04-WTL-80-wet Upland soil core

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-80-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>Pinus taeda</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>2</u> (A)
2 <u>Pinus virginiana</u>	<u>50</u>	<u>Y</u>		Total Number of Dominant Species Across all Strata:	<u>6</u> (B)
3 _____				Percent of Dominant Species that are OBL, FACW, or FAC:	<u>33.33%</u> (A/B)
4 _____					
5 _____					
6 _____					
7 _____					
	<u>100</u>	= Total Cover			
	50% of total cover <u>50</u>	20% of total cover: <u>20</u>			
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet	
1 <u>Pinus taeda</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	Total % Cover of:	Multiply by:
2 <u>Pinus virginiana</u>	<u>5</u>	<u>Y</u>		OBL species <u>0</u>	x 1 = <u>0</u>
3 <u>Ilex opaca</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	FACW species <u>0</u>	x 2 = <u>0</u>
4 <u>Quercus falcata</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	FAC species <u>55</u>	x 3 = <u>165</u>
5 _____				FACU species <u>10</u>	x 4 = <u>40</u>
6 _____				UPL species <u>0</u>	x 5 = <u>0</u>
7 _____				Column totals <u>65</u>	(A) <u>205</u> (B)
8 _____					
9 _____					
	<u>20</u>	= Total Cover		Prevalence Index = B/A = <u>3.15</u>	
	50% of total cover <u>10</u>	20% of total cover: <u>4</u>			
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:	
1 <u>none</u>				<u> </u> 1 -Rapid Test for Hydrophytic Vegetation	
2 _____				<u> </u> 2 - Dominance Test is >50%	
3 _____				<u> </u> 3 - Prevalence Index is ≤3.0 ¹	
4 _____				<u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5 _____				<u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)	
6 _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
7 _____					
8 _____					
9 _____					
10 _____					
11 _____					
	<u>0</u>	= Total Cover		Definitions of Four Vegetation Strata:	
	50% of total cover <u>0</u>	20% of total cover: <u>0</u>		Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Sapling/shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1m) tall.	
1 <u>none</u>				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
2 _____				Woody vines - All woody vines greater than 3.28 ft in height.	
3 _____					
4 _____					
5 _____					
	<u>0</u>	= Total Cover		Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	
	50% of total cover <u>0</u>	20% of total cover: <u>0</u>			
Remarks: (Include photo numbers here or on a separate sheet.)					

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Hanover County Sampling Date: December 9, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-81-wet
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.88599955 Long: -77.46164992 Datum: NAD-1983
 Soil Map Unit Name: Pamunkey fine sandy loam, 0 to 2 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<input checked="" 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 checked="" type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input 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 type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u><2 inches</u> Water table present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>surface</u> Saturation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **STR-01 flows through WTL-02 and becomes braided.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-81-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>Liquidambar styraciflua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>9</u> (A)	
2 <u>Quercus phellos</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	Total Number of Dominant Species Across all Strata: <u>10</u> (B)	
3 <u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	Percent of Dominant Species that are OBL, FACW, or FAC: <u>90.00%</u> (A/B)	
4 <u>Platanus occidentalis</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>		
5 <u>Acer negundo</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>		
6 <u>Ulmus americana</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>		
7 _____					
	<u>75</u> = Total Cover				
	50% of total cover <u>37.5</u>	20% of total cover: <u>15</u>			
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet	
1 <u>Alnus spp.</u>	<u>10</u>	<u>Y</u>		Total % Cover of: Multiply by:	
2 <u>Acer negundo</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	OBL species <u>5</u> x 1 = <u>5</u>	
3 <u>Forestiera acuminata</u>	<u>5</u>	<u>Y</u>	<u>OBL</u>	FACW species <u>20</u> x 2 = <u>40</u>	
4 _____				FAC species <u>150</u> x 3 = <u>450</u>	
5 _____				FACU species <u>0</u> x 4 = <u>0</u>	
6 _____				UPL species <u>0</u> x 5 = <u>0</u>	
7 _____				Column totals <u>175</u> (A) <u>495</u> (B)	
8 _____				Prevalence Index = B/A = <u>2.83</u>	
9 _____					
	<u>20</u> = Total Cover				
	50% of total cover <u>10</u>	20% of total cover: <u>4</u>			
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:	
1 <u>Microstegium vimineum</u>	<u>90</u>	<u>Y</u>	<u>FAC</u>	<u> </u> 1 -Rapid Test for Hydrophytic Vegetation	
2 <u>Carex spp.</u>	<u>5</u>	<u>N</u>		<u>X</u> 2 - Dominance Test is >50%	
3 <u>Aster spp.</u>	<u>5</u>	<u>N</u>		<u>X</u> 3 - Prevalence Index is ≤3.0 ¹	
4 <u>Lonicera spp.</u>	<u>5</u>	<u>N</u>		<u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5 <u>Solidego spp.</u>	<u>5</u>	<u>N</u>		<u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)	
6 _____					
7 _____					
8 _____					
9 _____					
10 _____					
11 _____					
	<u>110</u> = Total Cover				
	50% of total cover <u>55</u>	20% of total cover: <u>22</u>			
Woody Vine Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Definitions of Four Vegetation Strata:	
1 <u>none</u>				Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
2 _____				Sapling/shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1m) tall.	
3 _____				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
4 _____				Woody vines - All woody vines greater than 3.28 ft in height.	
5 _____					
	<u>0</u> = Total Cover				
	50% of total cover <u>0</u>	20% of total cover: <u>0</u>			
				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	

Remarks:

SOIL

Sampling Point: 04-WTL-81-wet

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 ¹	Loc ²		
0-4	5Y 4 / 2	95	2.5YR 4 / 6	5			silt loam	
4-10	5Y 4 / 1	95	5YR 4 / 6	5			silty clay loam	
10-13	2.5Y 4 / 1	100					silty clay	
13-15+	5Y 4 / 1	100					silty clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

- | | |
|--|---|
| Hydric Soil Indicators: | Indicators for Problematic Hydric Soils³: |
| <input type="checkbox"/> Histisol (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 Mucky Mineral (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) | |

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

Restrictive Layer (if observed):
 Type: clay
 Depth (inches): 12
 Hydric soil present? Yes X No _____

Remarks:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-81-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	3	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 8

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-81-wet Floodplain wetland to 12-A2-STR-01



04-WTL-81-wet Floodplain wetland to 12-A2-STR-01



04-WTL-81-wet 12-A2-STR-01 floodplain wetland



04-WTL-81-wet Wetland soil core



04-WTL-81-wet View of upland



04-WTL-81-wet Upland soil core

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Hanover County Sampling Date: December 9, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-81-upl
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 10%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.88612464 Long: -77.46150477 Datum: NAD-1983
 Soil Map Unit Name: Pamunkey fine sandy loam, 0 to 2 percent slopes NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	
Remarks: This upland data point is well drained, Field Sheet 12-WTL-02-Upl, Team A.			

HYDROLOGY

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

Field Observations:		Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Surface water present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Water table present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe)	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	

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

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-81-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A)	
2 <u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	Total Number of Dominant Species Across all Strata: <u>10</u> (B)	
3 <u>Quercus phellos</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	Percent of Dominant Species that are OBL, FACW, or FAC: <u>60.00%</u> (A/B)	
4 <u>Platanus occidentalis</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>		
5 <u>Prunus spp.</u>	<u>10</u>	<u>Y</u>			
6 _____					
7 _____					
	<u>50</u>	= Total Cover			
A	50% of total cover <u>25</u>	20% of total cover: <u>10</u>			
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet 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>85</u> x 3 = <u>255</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>105</u> (A) <u>315</u> (B) Prevalence Index = B/A = <u>3.00</u>	
1 <u>Juniperus virginiana</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>		
2 <u>Quercus phellos</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>		
3 <u>Fagus spp.</u>	<u>5</u>	<u>Y</u>			
4 _____					
5 _____					
6 _____					
7 _____					
8 _____					
9 _____					
	<u>15</u>	= Total Cover			
A	50% of total cover <u>7.5</u>	20% of total cover: <u>3</u>			
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: <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 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ 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 (1m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height.	
1 <u>Microstegium vimineum</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>		
2 <u>Lonicera spp.</u>	<u>15</u>	<u>Y</u>			
3 <u>Athyrium filix-femina</u>	<u>5</u>	<u>N</u>			
4 <u>Polystichum acrostichoides</u>	<u>5</u>	<u>N</u>	<u>FACU</u>		
5 _____					
6 _____					
7 _____					
8 _____					
9 _____					
10 _____					
11 _____					
	<u>75</u>	= Total Cover			
A	50% of total cover <u>37.5</u>	20% of total cover: <u>15</u>			
Woody Vine Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
1 <u>none</u>					
2 _____					
3 _____					
4 _____					
5 _____					
	<u>0</u>	= Total Cover			
A	50% of total cover <u>0</u>	20% of total cover: <u>0</u>			
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic vegetation is present.	

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 ¹	Loc2		
0-3	10YR 3 / 2	100					sandy loam	fine sandy loam
3-12+	2.5Y 5 / 4	100					sandy clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Mucky Mineral (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 Soils³:

- 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)

³Indicators 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 X

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Hanover County Sampling Date: December 8, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-82-wet
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.881173 Long: -77.460167 Datum: NAD-1983
 Soil Map Unit Name: Caroline fine sandy loam, 2 to 7 percent slopes NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Wetland is located in railroad ditch. Field Sheet 12-WTL-01-Wet1, Team A.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<input checked="" 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"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> True Aquatic Plants (B14)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ Water table present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-82-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1 <u>none</u>				Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)	
2 _____				Total Number of Dominant Species Across all Strata: _____ (B)	
3 _____				Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)	
4 _____					
5 _____					
6 _____					
7 _____					
	<u>0</u>	= Total Cover			
	50% of total cover <u>0</u>	20% of total cover: <u>0</u>			
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet	
1 <u>none</u>				Total % Cover of: _____ Multiply by: _____	
2 _____				OBL species _____ x 1 = _____	
3 _____				FACW species _____ x 2 = _____	
4 _____				FAC species _____ x 3 = _____	
5 _____				FACU species _____ x 4 = _____	
6 _____				UPL species _____ x 5 = _____	
7 _____				Column totals _____ (A) _____ (B)	
8 _____				Prevalence Index = B/A = _____	
9 _____					
	<u>0</u>	= Total Cover			
	50% of total cover <u>0</u>	20% of total cover: <u>0</u>			
Herb Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:	
1 <u>Leersia oryzoides</u>	<u>80</u>	<u>Y</u>	<u>OBL</u>	<input checked="" type="checkbox"/> 1 -Rapid Test for Hydrophytic Vegetation	
2 <u>Typha angustifolia</u>	<u>60</u>	<u>Y</u>	<u>OBL</u>	<input type="checkbox"/> 2 - Dominance Test is >50%	
3 <u>Juncus effusus</u>	<u>20</u>	<u>N</u>	<u>FACW</u>	<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹	
4 _____				<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5 _____				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
6 _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
7 _____				Definitions of Four Vegetation Strata:	
8 _____				Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
9 _____				Sapling/shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1m) tall.	
10 _____				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
11 _____				Woody vines - All woody vines greater than 3.28 ft in height.	
	<u>160</u>	= Total Cover			
	50% of total cover <u>80</u>	20% of total cover: <u>32</u>			
Woody Vine Stratum (Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?	
1 <u>none</u>				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
2 _____					
3 _____					
4 _____					
5 _____					
	<u>0</u>	= Total Cover			
	50% of total cover <u>0</u>	20% of total cover: <u>0</u>			
Remarks:					

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-82-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	0	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	0	

Total Score 2

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-82-wet View of raiiside ditch wetland



04-WTL-82-wet View of raiiside ditch wetland



04-WTL-82-wet View of raiiside ditch wetland



04-WTL-82-wet Wetland soil core



04-WTL-82-wet View of upland area



04-WTL-82-wet Upland soil core

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Hanover County Sampling Date: December 8, 2015
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-82-upl
 Investigator(s): J. Budnik, M. Rockwell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 5%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.881177 Long: -77.460167 Datum: NAD-1983
 Soil Map Unit Name: Caroline fine sandy loam, 2 to 7 percent slopes NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland?	Yes <u> </u>	No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>			
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>			
Remarks: This is the upland data point near the railroad ditch wetland. Field Sheet 12-WTL-01-Upl, Team A.					

HYDROLOGY

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

Field Observations:		Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Surface water present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Water table present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe)	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	

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

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-82-upl**

	Absolute % Cover	Dominant Species?	Indicator Status																													
Tree Stratum (Plot Size: <u>30' radius</u>)																																
1 <u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	Dominance Test worksheet: 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>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>																													
3 _____																																
4 _____																																
5 _____																																
6 _____																																
7 _____																																
<u>20</u> = Total Cover A 50% of total cover <u>10</u> 20% of total cover: <u>4</u>				Prevalence Index worksheet <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:60%;"></th> <th style="width:10%; text-align:center;">Total % Cover of:</th> <th style="width:10%;"></th> <th style="width:20%; text-align:center;">Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species</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>FACW 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>FAC species</td> <td style="text-align:center"><u>130</u></td> <td style="text-align:center">x 3 =</td> <td style="text-align:center"><u>390</u></td> </tr> <tr> <td>FACU 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>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>Column totals</td> <td style="text-align:center"><u>140</u></td> <td style="text-align:center">(A)</td> <td style="text-align:center"><u>430</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>3.07</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>130</u>	x 3 =	<u>390</u>	FACU species	<u>10</u>	x 4 =	<u>40</u>	UPL species	<u>0</u>	x 5 =	<u>0</u>	Column totals	<u>140</u>	(A)	<u>430</u> (B)
	Total % Cover of:		Multiply by:																													
OBL species	<u>0</u>	x 1 =	<u>0</u>																													
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UPL species	<u>0</u>	x 5 =	<u>0</u>																													
Column totals	<u>140</u>	(A)	<u>430</u> (B)																													
Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)																																
1 <u>Juniperus virginiana</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>																													
2 <u>Pinus taeda</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>																													
3 <u>Liquidambar styraciflua</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>																													
4 _____																																
5 _____																																
6 _____																																
7 _____																																
8 _____																																
9 _____																																
<u>25</u> = Total Cover 50% of total cover <u>12.5</u> 20% of total cover: <u>5</u>				Hydrophytic Vegetation Indicators: <u> </u> 1 -Rapid Test for Hydrophytic Vegetation <u> X</u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)																												
Herb Stratum (Plot Size: <u>5' radius</u>)																																
1 <u>Lonicera japonica</u>	<u>80</u>	<u>Y</u>	<u>FAC</u>																													
2 <u>denuded grass</u>	<u>10</u>	<u>N</u>																														
3 _____																																
4 _____																																
5 _____																																
6 _____																																
7 _____																																
8 _____																																
9 _____																																
10 _____																																
11 _____																																
<u>90</u> = Total Cover 50% of total cover <u>45</u> 20% of total cover: <u>18</u>				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 (1m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height.																												
Woody Vine Stratum (Plot Size: <u>30' radius</u>)																																
1 <u>Campsis radicans</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>																													
2 _____																																
3 _____																																
4 _____																																
5 _____																																
<u>15</u> = Total Cover 50% of total cover <u>7.5</u> 20% of total cover: <u>3</u>				Hydrophytic Vegetation Present? Yes <u> X </u> No <u> </u>																												
Remarks: (Include photo numbers here or on a separate sheet.)																																

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 ¹	Loc2		
0-2	2.5Y 3.0 / 2	100					sandy clay	
2-15	2.5Y 4 / 3	100					sandy clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Mucky Mineral (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 Soils³:

- 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)

³Indicators 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 X

Remarks: **Upland area.**

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Hanover County Sampling Date: February 1, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-83-wet
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.881189 Long: -77.459903 Datum: NAD-1983
 Soil Map Unit Name: Dunbar fine sandy loam NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Data collected one week after major snow storm. Railroad ditch wetland. Some flow present due to snow melt. Field Sheet 13-B-WTL-01.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<input checked="" 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"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> True Aquatic Plants (B14)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input checked="" type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0-5</u> Water table present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>surface</u> Saturation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Some flow present due to snow melt.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-83-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 4

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-83-wet Typical view of wetland



04-WTL-83-wet Typical view of wetland



04-WTL-83-wet Typical view of wetland



04-WTL-83-wet Wetland soil core



04-WTL-83-wet Wetland soil core



04-WTL-83-wet Typical view of upland in gasoline ROW

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Hanover County Sampling Date: February 1, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-83-upl
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 35
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.881239 Long: -77.459809 Datum: NAD-1983
 Soil Map Unit Name: Dunbar fine sandy loam NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Data collected one week after major snow storm. Upland point taken in pipeline corridor (soils compacted and disturbed). Corridor down sloping toward railroad ditch wetland. Field Sheet: 13-B-WET-01, UPDP.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input 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"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> True Aquatic Plants (B14)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Upper 2" some saturation due to snow melt. Under normal circumstances not saturated.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-83-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Loblolly pine</u>	<u>30</u>	<u>Y</u>	
2	<u>Quercus phellos</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				

60 = Total Cover
 50% of total cover: 30 20% of total cover: 12

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

Prevalence Index worksheet

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>0</u>	x 4 = <u>0</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 = 3.00

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Minimal herb layer. Vegetation disturbed

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Hanover County Sampling Date: February 1, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 04-WTL-84-wet
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.878175 Long: -77.459675 Datum: NAD-1983
 Soil Map Unit Name: Lenoir loam NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes ___ No X (If no, explain in Remarks.)
 Are vegetation ____, Soil X, or Hydrology ____ significantly disturbed? Yes Are "normal circumstances" present? Yes X No ___
 Are vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (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 <u>X</u> No ___ Hydric Soil Present? Yes <u>X</u> No ___ Wetland Hydrology Present? Yes <u>X</u> No ___	Is the Sampled Area within a Wetland? Yes <u>X</u> No ___
Remarks: Data taken one week after a major snow storm. Upper 10" of soil disturbed by railroad activities (coal-like). Narrow rail road ditch wetland. Low quality wetland. Field Sheet: 13-B-WET-02, wetDP.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	___ Surface Soil Cracks (B6)
<u>X</u> Surface Water (A1)	___ Sparsely Vegetated Concave Surface (B8)
___ True Aquatic Plants (B14)	___ Drainage Patterns (B10)
<u>X</u> High Water Table (A2)	___ Moss Trim Lines (B16)
___ Hydrogen Sulfide Odor (C1)	___ Dry-Season Water Table (C2)
<u>X</u> Saturation (A3)	___ Crayfish Burrows (C8)
___ Oxidized Rhizospheres on Living Roots (C3)	___ Saturation Visible on Aerial Imagery (C9)
___ Water Marks (B1)	___ Geomorphic Position (D2)
___ Presence of Reduced Iron (C4)	___ Shallow Aquitard (D3)
___ Sediment Deposits (B2)	___ Microtopographic Relief (D4)
___ Recent Iron Reduction in Tilled Soils (C6)	___ FAC-Neutral Test (D5)
___ 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)	

Field Observations: Surface water present? Yes <u>X</u> No ___ Depth (inches): <u>0-1</u> Water table present? Yes <u>X</u> No ___ Depth (inches): <u>5</u> Saturation present? Yes <u>X</u> No ___ Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No ___
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-84-wet**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Juncus effusus</u>	<u>80</u>	<u>Y</u>	<u>FACW</u>
2	<u>Dicanthelium spp.</u>	<u>20</u>	<u>N</u>	
3	<u>Leersia oryzoides</u>	<u>10</u>	<u>N</u>	<u>OBL</u>
4	<u>Carex spp.</u>	<u>5</u>	<u>N</u>	
5				
6				
7				
8				
9				
10				
11				

115 = Total Cover

50% of total cover: 57.5 20% of total cover: 23

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: _____ (B)

Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	_____ x 1 = _____
FACW species	_____ x 2 = _____
FAC species	_____ x 3 = _____
FACU species	_____ x 4 = _____
UPL species	_____ x 5 = _____
Column totals	_____ (A) _____ (B)

Prevalence Index = B/A = _____

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-84-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	0	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	0	

Total Score 2

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-84-wet Typical view of wetland



04-WTL-84-wet Typical view of wetland



04-WTL-84-wet Typical view of wetland



04-WTL-84-wet Wetland soil core



04-WTL-84-wet View of upland area



04-WTL-84-wet Upland soil core

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Hanover County Sampling Date: February 1, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-84-upl
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 40
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.878170 Long: -77.459675 Datum: NAD-1983
 Soil Map Unit Name: Lenoir loam NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Data collected one week after major snow storm. Soils are disturbed by railroad activities. Soils are well drained. Field Sheet: 13-B-WET-01, UPDP.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input 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"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> True Aquatic Plants (B14)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

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

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-84-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Quercus spp. (red)</u>	<u>50</u>	<u>Y</u>	
2				
3				
4				
5				
6				
7				

50 = Total Cover
 50% of total cover: 25 20% of total cover: 10

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Pinus taeda</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
2	<u>Juniperus virginiana</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>
3				
4				
5				
6				
7				
8				
9				

35 = Total Cover
 50% of total cover: 17.5 20% of total cover: 7

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Sorghastrum nutans</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>
2	<u>Andropogon virginicus</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>
3				
4				
5				
6				
7				
8				
9				
10				
11				

60 = Total Cover
 50% of total cover: 30 20% of total cover: 12

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Campsis radicans</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				

30 = Total Cover
 50% of total cover: 15 20% of total cover: 6

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 33.33% (A/B)

Prevalence Index worksheet

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>50</u>	x 3 = <u>150</u>
FACU species <u>75</u>	x 4 = <u>300</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>125</u>	(A) <u>450</u> (B)

Prevalence Index = B/A = 3.60

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

SOIL

Sampling Point: 04-WTL-84-upl

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 ¹	Loc2		
0-8	5Y 2.5 / 1	100					sandy loam	disturbed, coal-like
8-12	2.5Y 4 / 3	50	5Y 2.5 / 1	50			sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 Mucky Mineral (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)		

³Indicators 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 **X** _____

Remarks:

Soils are disturbed.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Hanover County Sampling Date: February 1, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 04-WTL-85-wet
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.877129 Long: -77.459479 Datum: NAD-1983
 Soil Map Unit Name: Lenoir loam NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes ___ No X (If no, explain in Remarks.)
 Are vegetation ____, Soil X, or Hydrology ____ significantly disturbed? Yes Are "normal circumstances" present? Yes X No ___
 Are vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (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 <u>X</u> No ___ Hydric Soil Present? Yes <u>X</u> No ___ Wetland Hydrology Present? Yes <u>X</u> No ___	Is the Sampled Area within a Wetland? Yes <u>X</u> No ___
Remarks: Data taken one week after a major snow storm. Soils are disturbed (wetland is in pipeline corridor). Wetland is a depression in the pipeline corridor. Drains to small stream in forested area outside of study corridor. Field Sheet: 13-B-WET-03, wetDP.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<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"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> True Aquatic Plants (B14)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes ___ No <u>X</u> Depth (inches): _____ Water table present? Yes <u>X</u> No ___ Depth (inches): <u>6</u> Saturation present? Yes <u>X</u> No ___ Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No ___
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-85-wet**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Microstegium vimineum</u>	<u>90</u>	<u>Y</u>	<u>FAC</u>
2	<u>Juncus effusus</u>	<u>10</u>	<u>N</u>	<u>FACW</u>
3				
4				
5				
6				
7				
8				
9				
10				
11				

100 = Total Cover

50% of total cover: 50 20% of total cover: 20

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index worksheet

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>90</u> x 3 = <u>270</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>290</u> (B)

Prevalence Index = B/A = 2.90

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-85-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 6

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-85-wet Typical view of wetland



04-WTL-85-wet View of wetland abutting railroad



04-WTL-85-wet Typical view of wetland



04-WTL-85-wet Typical view of wetland in gaine ROW



04-WTL-85-wet Wetland soil core



04-WTL-85-wet View of upland area

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Hanover County Sampling Date: February 1, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-85-upl
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 30
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.876442 Long: -77.45942 Datum: NAD-1983
 Soil Map Unit Name: Duplin fine sandy loam, 2 to 7 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Data collected one week after major snow storm. Soils are disturbed as upland point was taken in pipeline corridor. Hill slopes down to depression/wetland. Field Sheet: 13-B-WET-03, UPDP.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input 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"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> True Aquatic Plants (B14)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

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

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are moderately to well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-85-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
6				
7				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Prevalence Index worksheet

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>5</u> x 4 = <u>20</u>
UPL species	<u>0</u> x 5 = <u>0</u>
Column totals	<u>5</u> (A) <u>20</u> (B)

Prevalence Index = B/A = 4.00

Sapling/Shrub Stratum (Plot Size: 15' radius)

1	<u>Ilex opaca</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>
2				
3				
4				
5				
6				
7				
8				
9				

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is $\leq 3.0^1$

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

5 = Total Cover

50% of total cover: 2.5 20% of total cover: 1

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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Herb Stratum (Plot Size: 5' radius)

1	<u>Andropogon spp.</u>	<u>70</u>	<u>Y</u>	
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

Woody Vine Stratum (Plot Size: 30' radius)

1				
2				
3				
4				
5				

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Hydrophytic Vegetation Present? Yes No X

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

Vegetation disturbed/mowed.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Hanover County Sampling Date: February 1, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-86-wet
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 5
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.87507 Long: -77.459223 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents, nearly level NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Remarks: **Data taken one week after a major snow storm. Wetland in floodplain of Bull Run. Soils saturated at the surface and some surface water present. Bull Run flows adjacent to wetland.**
 Field Sheet: **13-B-WET-04, wetDP.**

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Water table present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>2</u>	
Saturation present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>surface</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Floodplain fo Bull Run.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-86-wet**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liriodendron tulipifera</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>
2	<u>Platanus occidentalis</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>
3				
4				
5				
6				
7				

70 = Total Cover

50% of total cover: 35 20% of total cover: 14

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Alnus serrulata</u>	<u>15</u>	<u>Y</u>	<u>OBL</u>
2	<u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				
8				
9				

25 = Total Cover

50% of total cover: 12.5 20% of total cover: 5

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Juncus effusus</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

10 = Total Cover

50% of total cover: 5 20% of total cover: 2

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Smilax spp.</u>	<u>25</u>	<u>Y</u>	
2				
3				
4				
5				

25 = Total Cover

50% of total cover: 12.5 20% of total cover: 5

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>15</u>	x 1 = <u>15</u>
FACW species <u>40</u>	x 2 = <u>80</u>
FAC species <u>10</u>	x 3 = <u>30</u>
FACU species <u>40</u>	x 4 = <u>160</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>105</u>	(A) <u>285</u> (B)

Prevalence Index = B/A = 2.71

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-86-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 4

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-86-wet View of wetland in gasoline ROW



04-WTL-86-wet Typical view of wetland



04-WTL-86-wet Typical view of wetland



04-WTL-86-wet View of culvert connecting wetland under railroad



04-WTL-86-wet Wetland soil core



04-WTL-86-wet View of upland in gasoline ROW

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Hanover County Sampling Date: February 1, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-86-upl
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 30%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.874976 Long: -77.459301 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents, nearly level NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

Remarks: **Data collected one week after major snow storm. Soils are disturbed by railroad activities (coal-like). Under normal hydrologic conditions, soils would be moderately to well-drained.**
 Field Sheet: **13-B-WET-04, UPDP.**

HYDROLOGY

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

Field Observations: Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are slightly saturated due to snow melt. Under normal hydrologic circumstances soils would be moderately to well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-86-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liriodendron tulipifera</u>	<u>25</u>	<u>Y</u>	<u>FACU</u>
2	<u>Liquidambar styraciflua</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				

50 = Total Cover
 50% of total cover: 25 20% of total cover: 10

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Juniperus virginiana</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>
2				
3				
4				
5				
6				
7				
8				
9				

15 = Total Cover
 50% of total cover: 7.5 20% of total cover: 3

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2	<u>Amaryllis spp.</u>	<u>10</u>	<u>Y</u>	
3				
4				
5				
6				
7				
8				
9				
10				
11				

40 = Total Cover
 50% of total cover: 20 20% of total cover: 8

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 40.00% (A/B)

Prevalence Index worksheet

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>55</u>	x 3 = <u>165</u>
FACU species <u>40</u>	x 4 = <u>160</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>95</u>	(A) <u>325</u> (B)

Prevalence Index = B/A = 3.42

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

Vegetation disturbed/mowed.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Hanover County Sampling Date: February 1, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-87-wet
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.86968 Long: -77.459034 Datum: NAD-1983
 Soil Map Unit Name: Dunbar fine sandy loam NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes ___ No X (If no, explain in Remarks.)
 Are vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? No Are "normal circumstances" present? Yes X No ___
 Are vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (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 <u>X</u> No ___ Hydric Soil Present? Yes <u>X</u> No ___ Wetland Hydrology Present? Yes <u>X</u> No ___	Is the Sampled Area within a Wetland? Yes <u>X</u> No ___
Remarks: Data taken one week after a major snow storm. This is a railroad ditch wetland. This may be an isolated wetland. Field Sheet: 13-B-WET-05, wetDP.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u>X</u> Surface Water (A1)	___ Surface Soil Cracks (B6)
<u>X</u> High Water Table (A2)	___ Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Saturation Visible on Aerial Imagery (C9)
___ 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)
___ True Aquatic Plants (B14)	
___ Hydrogen Sulfide Odor (C1)	
___ Oxidized Rhizospheres on Living Roots (C3)	
___ Presence of Reduced Iron (C4)	
___ Recent Iron Reduction in Tilled Soils (C6)	
___ Thin Muck Surface (C7)	
___ Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u>X</u> No ___ Depth (inches): <u>surface</u> Water table present? Yes <u>X</u> No ___ Depth (inches): <u>surface</u> Saturation present? (includes capillary fringe) Yes <u>X</u> No ___ Depth (inches): <u>surface</u>	Wetland Hydrology Present? Yes <u>X</u> No ___
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Floodplain fo Bull Run.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-87-wet**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Pinus taeda</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				

10 = Total Cover

50% of total cover: 5

20% of total cover: 2

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Pinus taeda</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				

10 = Total Cover

50% of total cover: 5

20% of total cover: 2

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Juncus effusus</u>	<u>50</u>	<u>Y</u>	<u>FACW</u>
2	<u>Carex vulpinoidea</u>	<u>15</u>	<u>Y</u>	<u>OBL</u>
3				
4				
5				
6				
7				
8				
9				
10				
11				

65 = Total Cover

50% of total cover: 32.5

20% of total cover: 13

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Rubus spp.</u>	<u>5</u>	<u>Y</u>	
2				
3				
4				
5				

5 = Total Cover

50% of total cover: 2.5

20% of total cover: 1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 80.00% (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>15</u>	x 1 = <u>15</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>85</u>	(A) <u>175</u> (B)

Prevalence Index = B/A = 2.06

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-87-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 4

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-87-wet Typical view of wetland



04-WTL-87-wet Typical view of wetland



04-WTL-87-wet Typical view of wetland



04-WTL-87-wet Wetland soil core



04-WTL-87-wet View of upland area



04-WTL-87-wet Upland soil core

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Hanover County Sampling Date: February 1, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-87-upl
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 30
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.869584 Long: -77.458878 Datum: NAD-1983
 Soil Map Unit Name: Dunbar fine sandy loam NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Data collected one week after major snow storm. On hillslope between wetland and pipeline ROW. Soils are disturbed by railroad and pipeline ROW. Field Sheet: 13-B-WET-05, UPDP.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input 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"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> True Aquatic Plants (B14)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are moderately to well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-87-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Pinus taeda</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2	<u>Quercus nigra</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
3	<u>Liquidambar styraciflua</u>	<u>10</u>	<u>N</u>	<u>FAC</u>
4				
5				
6				
7				

55 = Total Cover
 50% of total cover: 27.5 20% of total cover: 11

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				

15 = Total Cover
 50% of total cover: 7.5 20% of total cover: 3

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>senesced grass</u>	<u>80</u>	<u>Y</u>	
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

80 = Total Cover
 50% of total cover: 40 20% of total cover: 16

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 75.00% (A/B)

Prevalence Index worksheet

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>70</u>	x 3 = <u>210</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>70</u>	(A) <u>210</u> (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Senesced grass assumed to be an upland species of Panicum.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Hanover County Sampling Date: February 1, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-88-wet
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.863741 Long: -77.458416 Datum: NAD-1983
 Soil Map Unit Name: Coxville loam NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Data taken one week after a major snow storm. Upper 4" of soil is disturbed by railroad activities. This is a railroad ditch wetland. Low quality. Field Sheet: 13-B-WET-06, wetDP.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<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"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> True Aquatic Plants (B14)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u><4 inches</u> Water table present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>8</u> Saturation present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>surface</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Majority of ditch has standing water.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-88-wet**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
6				
7				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
2	<u>Liquidambar styraciflua</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				
8				
9				

30 = Total Cover
 50% of total cover: 15 20% of total cover: 6

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Microstegium vimineum</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>
2	<u>Dichanthelium clandestinum</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>
3	<u>Juncus effusus</u>	<u>15</u>	<u>N</u>	<u>FACW</u>
4	<u>Lonicera japonica</u>	<u>10</u>	<u>N</u>	<u>FAC</u>
5				
6				
7				
8				
9				
10				
11				

100 = Total Cover
 50% of total cover: 50 20% of total cover: 20

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Rubus spp.</u>	<u>5</u>	<u>Y</u>	
2				
3				
4				
5				

5 = Total Cover
 50% of total cover: 2.5 20% of total cover: 1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 80.00% (A/B)

Prevalence Index worksheet

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>115</u> x 3 = <u>345</u>
FACU species	<u>0</u> x 4 = <u>0</u>
UPL species	<u>0</u> x 5 = <u>0</u>
Column totals	<u>130</u> (A) <u>375</u> (B)

Prevalence Index = B/A = 2.88

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

SOIL

Sampling Point: 04-WTL-88-wet

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 ¹	Loc2		
0-4							sand	disturbed
4-12	5Y 5 / 1	95	2.5YR 4 / 8	5			silty clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> 2 cm Mucky Mineral (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)		

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

Restrictive Layer (if observed):

Type: clay

Depth (inches): 4

Hydric soil present? Yes No

Remarks:

Upper soil is disturbed by railroad activities.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-88-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 4

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-88-wet Typical view of wetland



04-WTL-88-wet Typical view of wetland



04-WTL-88-wet Typical view of wetland in galine ROW



04-WTL-88-wet Typical view of wetland in galine ROW



04-WTL-88-wet Wetland soil core



04-WTL-88-wet Typical view of upland

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Hanover County Sampling Date: February 1, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-88-upl
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 35
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.863503 Long: -77.458291 Datum: NAD-1983
 Soil Map Unit Name: Coxville loam NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

Remarks: **Data collected one week after major snow storm. Soils are disturbed by railroad activities and creation of pipeline corridor. Soils are moderately to well-drained.**
Field Sheet: 13-B-WET-06, UPDP.

HYDROLOGY

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

Field Observations: Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-88-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Pinus taeda</u>	<u>100</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				

100 = Total Cover
 50% of total cover: 50 20% of total cover: 20

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Juniperus virginiana</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>
2	<u>Pinus taeda</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				
8				
9				

25 = Total Cover
 50% of total cover: 12.5 20% of total cover: 5

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>senesced grass</u>	<u>15</u>	<u>Y</u>	
2	<u>Lonicera japonica</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				
8				
9				
10				
11				

25 = Total Cover
 50% of total cover: 12.5 20% of total cover: 5

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 60.00% (A/B)

Prevalence Index worksheet

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>120</u>	x 3 = <u>360</u>
FACU species <u>15</u>	x 4 = <u>60</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>135</u>	(A) <u>420</u> (B)

Prevalence Index = B/A = 3.11

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Senesced grass believed to be an upland species in the Panicum family.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Hanover County Sampling Date: February 2, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-89-wet
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.858749 Long: -77.457954 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents, nearly level NWI classification: PEM/PSS

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes ___ No X (If no, explain in Remarks.)
 Are vegetation X, Soil ___, or Hydrology ___ significantly disturbed? Yes Are "normal circumstances" present? Yes X No ___
 Are vegetation ___, Soil ___, or Hydrology ___ naturally problematic? No (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 <u>X</u> No ___	Is the Sampled Area within a Wetland? Yes <u>X</u> No ___
Hydric Soil Present? Yes <u>X</u> No ___	
Wetland Hydrology Present? Yes <u>X</u> No ___	

Remarks: **Data taken one week after a major snow storm. Wetland is A depression at the intersection of 2 railroad lines. Boundary nearly abuts the ballast at both railroads. Stream 3 likely flows into this wetland outside of the study area. Seep water appears to be coming from underneath railroad ballast. Saplings have been cleared in pipeline ROW.**
 Field Sheet: **13-B-WET-07, wetDP.**

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	___ Surface Soil Cracks (B6)
<u>X</u> Surface Water (A1)	___ Sparsely Vegetated Concave Surface (B8)
___ High Water Table (A2)	___ Drainage Patterns (B10)
<u>X</u> 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)	___ Geomorphic Position (D2)
___ Iron Deposits (B5)	___ Shallow Aquitard (D3)
___ Inundation Visible on Aerial Imagery (B7)	___ Microtopographic Relief (D4)
<u>X</u> Water-Stained Leaves (B9)	___ FAC-Neutral Test (D5)
___ Aquatic Fauna (B13)	

Field Observations: Surface water present? Yes <u>X</u> No ___ Depth (inches): <u>1</u> Water table present? Yes ___ No <u>X</u> Depth (inches): ___ Saturation present? Yes <u>X</u> No ___ Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No ___
--	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Seep water appears to be coming from underneath railroad ballast. Wetland likely connects to Stream 3 outside of study area.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-89-wet**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				

5 = Total Cover
 50% of total cover: 2.5 20% of total cover: 1

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Alnus serrulata</u>	<u>25</u>	<u>Y</u>	<u>OBL</u>
2				
3				
4				
5				
6				
7				
8				
9				

25 = Total Cover
 50% of total cover: 12.5 20% of total cover: 5

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Dichanthelium clandestinum</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2	<u>Carex spp.</u>	<u>15</u>	<u>Y</u>	
3	<u>Juncus effusus</u>	<u>10</u>	<u>N</u>	<u>FACW</u>
4	<u>Lonicera japonica</u>	<u>10</u>	<u>N</u>	<u>FAC</u>
5	<u>Eupatorium spp.</u>	<u>10</u>	<u>N</u>	
6				
7				
8				
9				
10				
11				

75 = Total Cover
 50% of total cover: 37.5 20% of total cover: 15

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Rubus spp.</u>	<u>5</u>	<u>Y</u>	
2				
3				
4				
5				

5 = Total Cover
 50% of total cover: 2.5 20% of total cover: 1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 60.00% (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>25</u>	x 1 = <u>25</u>
FACW species <u>10</u>	x 2 = <u>20</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>80</u>	(A) <u>180</u> (B)

Prevalence Index = B/A = 2.25

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Saplings have been cleared for pipeline ROW.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-89-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 5

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-89-wet Typical view of wetland



04-WTL-89-wet View of wetland at intersection of rail lines



04-WTL-89-wet Typical view of wetland



04-WTL-89-wet Typical view of wetland in gas ROW



04-WTL-89-wet View of 7 foot, brick Culvert 04 feeding wetland from under railroad



04-WTL-89-wet View of upland area

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Hanover County Sampling Date: February 2, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-89-upl
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 30%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.858484 Long: -77.457842 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents, nearly level NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Data collected one week after major snow storm. Upland point on hillslope within pipeline ROW. Slopes down to stream 3. Saplings and some trees have been cleared for pipeline ROW. Soils are well drained. Field Sheet: 13-B-WET-07, UPDP.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input 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"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> True Aquatic Plants (B14)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

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

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

Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-89-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liriodendron tulipifera</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>
2	<u>Liquidambar styraciflua</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>
3	<u>Pinus taeda</u>	<u>15</u>	<u>N</u>	<u>FAC</u>
4	<u>Betula nigra</u>	<u>15</u>	<u>N</u>	<u>FACW</u>
5	<u>Quercus stellata</u>	<u>10</u>	<u>N</u>	<u>UPL</u>
6				
7				
		<u>105</u> = Total Cover		
50% of total cover: <u>52.5</u>		20% of total cover: <u>21</u>		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across all Strata: 7 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 42.86% (A/B)

Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Juniperus virginiana</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>
2	<u>Quercus phellos</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3	<u>Ilex opaca</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
4				
5				
6				
7				
8				
9				
		<u>40</u> = Total Cover		
50% of total cover: <u>20</u>		20% of total cover: <u>8</u>		

Prevalence Index worksheet

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>55</u>	x 3 = <u>165</u>
FACU species <u>70</u>	x 4 = <u>280</u>
UPL species <u>10</u>	x 5 = <u>50</u>
Column totals <u>150</u>	(A) <u>525</u> (B)

Prevalence Index = B/A = 3.50

Herb Stratum (Plot Size: <u>5' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Amaryllis spp.</u>	<u>10</u>	<u>Y</u>	
2	<u>Lonicera japonica</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				
8				
9				
10				
11				
		<u>15</u> = Total Cover		
50% of total cover: <u>7.5</u>		20% of total cover: <u>3</u>		

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is $\leq 3.0^1$
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Woody Vine Stratum (Plot Size: <u>30' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
		<u>0</u> = Total Cover		
50% of total cover: <u>0</u>		20% of total cover: <u>0</u>		

Hydrophytic Vegetation Present? Yes No X

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

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Hanover County Sampling Date: February 2, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-90-wet
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.845805 Long: -77.457313 Datum: NAD-1983
 Soil Map Unit Name: Coxville loam NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes ___ No X (If no, explain in Remarks.)
 Are vegetation X, Soil ___, or Hydrology ___ significantly disturbed? Yes Are "normal circumstances" present? Yes X No ___
 Are vegetation ___, Soil ___, or Hydrology ___ naturally problematic? No (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 <u>X</u> No ___	Is the Sampled Area within a Wetland? Yes <u>X</u> No ___
Hydric Soil Present? Yes <u>X</u> No ___	
Wetland Hydrology Present? Yes <u>X</u> No ___	

Remarks: **Data taken one week after a major snow storm. Large wetland that maintains surface water 3-10" for a long duration. Buttressed trees present with some having moss trim lines. Wetland drains to Culvert 6. This is a good quality wetland.**
 Field Sheet: **13-B-WET-08, wetDP.**

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No ___ Depth (inches): <u>3-10</u> Water table present? Yes <u>X</u> No ___ Depth (inches): <u>1</u> Saturation present? Yes <u>X</u> No ___ Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No ___
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Surface water ranges from 3-10" throughout wetland. Buttressed trees present.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-90-wet**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Quercus phellos</u>	<u>70</u>	<u>Y</u>	<u>FAC</u>
2	<u>Betula nigra</u>	<u>15</u>	<u>N</u>	<u>FACW</u>
3	<u>Liquidambar styraciflua</u>	<u>15</u>	<u>N</u>	<u>FAC</u>
4				
5				
6				
7				

100 = Total Cover

50% of total cover: 50 20% of total cover: 20

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>
2	<u>Pinus taeda</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				
8				
9				

45 = Total Cover

50% of total cover: 22.5 20% of total cover: 9

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Juncus effusus</u>	<u>15</u>	<u>Y</u>	<u>FACW</u>
2	<u>Lycopodiopsida spp.</u>	<u>15</u>	<u>Y</u>	
3	<u>Carex spp.</u>	<u>10</u>	<u>N</u>	
4	<u>Smilax spp.</u>	<u>10</u>	<u>N</u>	
5	<u>Pinus taeda</u>	<u>5</u>	<u>N</u>	<u>FAC</u>
6				
7				
8				
9				
10				
11				

55 = Total Cover

50% of total cover: 27.5 20% of total cover: 11

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 80.00% (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>30</u>	x 2 = <u>60</u>
FAC species <u>135</u>	x 3 = <u>405</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>465</u> (B)

Prevalence Index = B/A = 2.82

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-90-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	2	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 9

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-90-wet Typical view of wetland adjacent railroad



04-WTL-90-wet Typical view of wetland, railroad in the background



04-WTL-90-wet Typical view of wetland



04-WTL-90-wet Typical view of wetland



04-WTL-90-wet View of upland area



04-WTL-90-wet Soil core

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Hanover County Sampling Date: February 2, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-90-upl
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 5
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.845821 Long: -77.457235 Datum: NAD-1983
 Soil Map Unit Name: Coxville loam NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

Remarks: **Data collected one week after major snow storm. Soils are moderately well drained.**
Field Sheet: 13-B-WET-08, UPDP.

HYDROLOGY

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

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

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are moderately to well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-90-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Quercus phellos</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>
2	<u>Pinus taeda</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>
3	<u>Fagus grandifolia</u>	<u>25</u>	<u>Y</u>	<u>FACU</u>
4	<u>Liquidambar styraciflua</u>	<u>10</u>	<u>N</u>	<u>FAC</u>
5				
6				
7				

85 = Total Cover
 50% of total cover: 42.5 20% of total cover: 17

Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Ilex opaca</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>
2	<u>Juniperus virginiana</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
3				
4				
5				
6				
7				
8				
9				

30 = Total Cover
 50% of total cover: 15 20% of total cover: 6

Herb Stratum (Plot Size: <u>5' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Pinus taeda</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>
2	<u>Ilex opaca</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>
3				
4				
5				
6				
7				
8				
9				
10				
11				

10 = Total Cover
 50% of total cover: 5 20% of total cover: 2

Woody Vine Stratum (Plot Size: <u>30' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Smilax spp.</u>	<u>5</u>	<u>Y</u>	
2				
3				
4				
5				

5 = Total Cover
 50% of total cover: 2.5 20% of total cover: 1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across all Strata: 8 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 37.50% (A/B)

Prevalence Index worksheet

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>65</u>	x 3 =	<u>195</u>
FACU species <u>60</u>	x 4 =	<u>240</u>
UPL species <u>0</u>	x 5 =	<u>0</u>
Column totals <u>125</u>	(A)	<u>435</u> (B)

Prevalence Index = B/A = 3.48

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Hanover County Sampling Date: September 1, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-91-wet
 Investigator(s): L. Eggering, L. Postaski Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): RR ditch Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.8394 Long: -77.456386 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents, nearly level NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is a railroad ditch wetland that broadens out as it crosses a utility ROW, east of the railroad.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-91-wet**

Tree Stratum	(Plot Size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: _____ (B)

Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column totals _____	(A) _____ (B) _____

Prevalence Index = B/A = _____

Sapling/Shrub Stratum	(Plot Size: 15' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is $\leq 3.0^1$

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Juncus effusus	15	Y	FACW
2	Eleocharis obtusa	10	Y	OBL
3				
4				
5				
6				
7				
8				
9				
10				
11				

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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

25 = Total Cover

50% of total cover: **12.5** 20% of total cover: **5**

Woody Vine Stratum	(Plot Size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Hydrophytic Vegetation Present? Yes No

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

There is little vegetation located within the railroad ditch. As the wetland broadens out across the utility ROW, more vegetation is present.

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 ¹	Loc2		
0-3	10YR 4 / 2	100					Clay loam	
3-12	10YR 5 / 1	95	7.5YR 6 / 8	5			Clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> 2 cm Mucky Mineral (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)		

³Indicators 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:

The soils are depleted. Soils within the utility ROW may be disturbed from maintenance activities.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-91-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	0	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	0	

Total Score 2

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WLT-91-upl**

Tree Stratum	(Plot Size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: 15' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Liquidambar styraciflua	35	Y	FAC
2	Acer rubrum	25	Y	FAC
3	Liriodendron tulipifera	10	N	FACU
4				
5				
6				
7				
8				
9				

70 = Total Cover
 50% of total cover: **35** 20% of total cover: **14**

Herb Stratum	(Plot Size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Woody Vine Stratum	(Plot Size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Smilax glauca	15	Y	FACU
2				
3				
4				
5				

15 = Total Cover
 50% of total cover: **7.5** 20% of total cover: **3**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **2** (A)

Total Number of Dominant Species Across all Strata: **3** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **66.67%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	0 x 1 = 0
FACW species	0 x 2 = 0
FAC species	60 x 3 = 180
FACU species	25 x 4 = 100
UPL species	0 x 5 = 0
Column totals	85 (A) 280 (B)

Prevalence Index = B/A = **3.29**

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Minimal herbaceous cover present.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Hanover County Sampling Date: February 1, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-92-wet-1
 Investigator(s): L. Eggering, D. Mitchell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): RR ditch Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.83769 Long: -77.45634 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents, nearly level NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Railside ditch wetland. Field Sheet: 13-A-Wet1-Wetdp1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u><2 inches</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	---

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

Remarks: **Inundated.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-92-wet-1**

Tree Stratum	(Plot Size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: 15' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Juncus effusus	10	Y	FACW
2	Eleocharis obtusa	5	Y	OBL
3				
4				
5				
6				
7				
8				
9				
10				
11				

15 = Total Cover
 50% of total cover: **7.5** 20% of total cover: **3**

Woody Vine Stratum	(Plot Size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: _____ (B)

Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	_____ x 1 = _____
FACW species	_____ x 2 = _____
FAC species	_____ x 3 = _____
FACU species	_____ x 4 = _____
UPL species	_____ x 5 = _____
Column totals	_____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Little vegetation present in wetland ditch.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-92-wet-1

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	0	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	0	

Total Score 2

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



04-WTL-92-wet-1 Typical view of wetland ditch

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-92-upl-1**

Tree Stratum	(Plot Size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: 15' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Woody Vine Stratum	(Plot Size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 0 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet

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>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>0</u>	(A) <u>0</u> (B)

Prevalence Index = B/A =

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is $\leq 3.0^1$
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

No vegetation on ballast slope.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Hanover County Sampling Date: February 1, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-92-wet-2
 Investigator(s): L. Eggering, D. Mitchell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.834828 Long: -77.456981 Datum: NAD-1983
 Soil Map Unit Name: Augusta fine sandy loam NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Lower area creating a PFO. Wetland ditch from north and south flow into this wetland where it flows east under track via Culvert 6. Field Sheet: 13-A-Wet1-Wet dp2.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>6</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>6</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	--

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

Remarks: **Surface water present in deeper areas of the wetland.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-92-wet-2**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				

50 = Total Cover
 50% of total cover: 25 20% of total cover: 10

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
2	<u>Quercus phellos</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
3	<u>Betula nigra</u>	<u>10</u>	<u>N</u>	<u>FACW</u>
4	<u>Magnoliaceae spp.</u>	<u>5</u>	<u>N</u>	
5				
6				
7				
8				
9				

55 = Total Cover
 50% of total cover: 27.5 20% of total cover: 11

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index worksheet

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>90</u>	x 3 = <u>270</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>290</u> (B)

Prevalence Index = B/A = 2.90

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Mostly saplings with large pines at buffer.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Hanover County Sampling Date: February 1, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-92-upl-2
 Investigator(s): L. Eggering, D. Mitchell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 13%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.834989 Long: -77.457199 Datum: NAD-1983
 Soil Map Unit Name: Dunbar fine sandy loam NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u> X </u> Hydric Soil Present? Yes <u> </u> No <u> X </u> Wetland Hydrology Present? Yes <u> </u> No <u> X </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> X </u>
Remarks: Adjacent wooded area to wetland 1. Pines and white oak become predominant with fewer willow oak and red maple. Field Sheet: 13-A-Wet1 Up2.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u> X </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **No hydrology present.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-92-upl-2**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Pinus echinata</u>	<u>20</u>	<u>Y</u>	
2	<u>Pinus taeda</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
3	<u>Quercus alba</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>
4	<u>Quercus falcata</u>	<u>10</u>	<u>N</u>	<u>FACU</u>
5	<u>Quercus phellos</u>	<u>5</u>	<u>N</u>	<u>FAC</u>
6				
7				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 33.33% (A/B)

70 = Total Cover

50% of total cover: 35 20% of total cover: 14

Prevalence Index worksheet

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>30</u> x 4 = <u>120</u>
UPL species	<u>0</u> x 5 = <u>0</u>
Column totals	<u>60</u> (A) <u>210</u> (B)

Prevalence Index = B/A = 3.50

Sapling/Shrub Stratum (Plot Size: 15' radius)

1	<u>Pinus echinata</u>	<u>10</u>	<u>Y</u>	
2	<u>Liquidambar styraciflua</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>
3	<u>Quercus falcata</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>
4				
5				
6				
7				
8				
9				

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is $\leq 3.0^1$

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

20 = Total Cover

50% of total cover: 10 20% of total cover: 4

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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Herb Stratum (Plot Size: 5' radius)

1	<u>none</u>			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

Hydrophytic Vegetation Present? Yes No X

Woody Vine Stratum (Plot Size: 30' radius)

1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

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

Vegetation is mostly pine with a few oak spread about.

SOIL

Sampling Point: 04-WTL-92-upl-2

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 ¹	Loc2		
0-2	10YR 3 / 2							organics
2-12+	10YR 6 / 3						sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 Mucky Mineral (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)		

³Indicators 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 **X** _____

Remarks:

Soils are light below O-horizon but not reduced as in wetland area.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 4 City/County: Hanover County Sampling Date: September 1, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 04-WTL-93-wet
 Investigator(s): L. Eggering, L. Postaski Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): RR ditch Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.836952 Long: -77.456328 Datum: NAD-1983
 Soil Map Unit Name: Dunbar fine sandy loam NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is a railroad ditch wetland at the bottom of a hillslope.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? (includes capillary fringe) Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **This railroad ditch wetland likely receives runoff from the adjacent RR ballast and hillslope.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WTL-93-wet**

Tree Stratum	(Plot Size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: 15' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Juncus effusus	10	Y	FACW
2	Eleocharis obtusa	5	Y	OBL
3				
4				
5				
6				
7				
8				
9				
10				
11				

15 = Total Cover

50% of total cover: **7.5** 20% of total cover: **3**

Woody Vine Stratum	(Plot Size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: _____ (B)

Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	x 1 = _____
FACW species	x 2 = _____
FAC species	x 3 = _____
FACU species	x 4 = _____
UPL species	x 5 = _____
Column totals	(A) _____ (B) _____

Prevalence Index = B/A = _____

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- _____ Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

There is little vegetation located within the railroad ditch.

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 ¹	Loc2		
0-3	10YR 4 / 2	100					Clay loam	
3-12	10YR 5 / 1	95	7.5YR 6 / 8	5			Clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> 2 cm Mucky Mineral (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)		

³Indicators 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:

The soils are depleted.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 04-WTL-93-wet

Project/Site: DC2RVA-Area 4

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	0	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	0	

Total Score 2

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **04-WLT-93-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
2	<u>Acer rubrum</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
3	<u>Juniperus virginiana</u>	<u>5</u>	<u>N</u>	<u>FACU</u>
4				
5				
6				
7				
8				
9				

40 = Total Cover
 50% of total cover: 20 20% of total cover: 8

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Dichanthelium clandestium</u>	<u>10</u>	<u>Y</u>	
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

10 = Total Cover
 50% of total cover: 5 20% of total cover: 2

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Smilax glauca</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>
2				
3				
4				
5				

5 = Total Cover
 50% of total cover: 2.5 20% of total cover: 1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

Prevalence Index worksheet

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>35</u> x 3 =	<u>105</u>
FACU species	<u>10</u> x 4 =	<u>40</u>
UPL species	<u>0</u> x 5 =	<u>0</u>
Column totals	<u>45</u> (A)	<u>145</u> (B)

Prevalence Index = B/A = 3.22

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

Minimal herbaceous cover present.

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 ¹	Loc2		
0-12	10YR 5.0 / 4	100					Sandy Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 Mucky Mineral (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)		

³Indicators 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 X

Remarks:
The soils are well drained.

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-01-wet**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>70</u>	<u>Y</u>	<u>FAC</u>
2	<u>Pinus taeda</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3	<u>Nyssa sylvatica</u>	<u>5</u>	<u>N</u>	<u>FAC</u>
4				
5				
6				
7				

85 = Total Cover

50% of total cover: 42.5 20% of total cover: 17

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Ilex opaca</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
2				
3				
4				
5				
6				
7				
8				
9				

10 = Total Cover

50% of total cover: 5 20% of total cover: 2

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Prevalence Index worksheet

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>85</u>	x 3 = <u>255</u>
FACU species <u>10</u>	x 4 = <u>40</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>95</u>	(A) <u>295</u> (B)

Prevalence Index = B/A = 3.11

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No

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

Large sweetgums with a few pine and smaller holly. Beech and cedar in adjacent upland areas.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-01-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	0	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	0	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	2	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 4

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-01-wet

Photo description.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Hanover County Sampling Date: February 2, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-01-upl
 Investigator(s): L. Eggering, D. Mitchell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): railbed Local relief (concave, convex, none): convex Slope (%): 20
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.811247 Long: -77.465437 Datum: NAD-1983
 Soil Map Unit Name: Duplin fine sandy loam, 2 to 7 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	

Remarks: **Upland area is old railbed from 1800's, most likely. Adjacent ditch appears to be borrow pit for rail bed.**
Field Sheet: 13-A-Wet#3 up1.

HYDROLOGY

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

Field Observations:		Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Surface water present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Water table present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe)	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	

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

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-01-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Pinus echinata</u>	<u>40</u>	<u>Y</u>	
2	<u>Liquidambar styraciflua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				

60 = Total Cover
 50% of total cover: 30 20% of total cover: 12

Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Ilex opaca</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>
2	<u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				
8				
9				

25 = Total Cover
 50% of total cover: 12.5 20% of total cover: 5

Herb Stratum (Plot Size: <u>5' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

15 = Total Cover
 50% of total cover: 7.5 20% of total cover: 3

Woody Vine Stratum (Plot Size: <u>30' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Campsis radicans</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				

5 = Total Cover
 50% of total cover: 2.5 20% of total cover: 1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Prevalence Index worksheet

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>50</u>	x 3 = <u>150</u>
FACU species <u>15</u>	x 4 = <u>60</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>65</u>	(A) <u>210</u> (B)

Prevalence Index = B/A = 3.23

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

SOIL

Sampling Point: 05-WTL-01-upl

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 ¹	Loc2		
0-3	10YR 4 / 2						sandy loam	
3-12+	10YR 5 / 4						sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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"/> Piedmont Floodplain Soils (F19)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 2 cm Mucky Mineral (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)	
<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)		

³Indicators 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 **X**

Remarks:

Soils are typical of upland soils seen in the area.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Hanover County Sampling Date: February 2, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-02-wet
 Investigator(s): L. Eggering, D. Mitchell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): undulating swale Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.808276 Long: -77.466541 Datum: NAD-1983
 Soil Map Unit Name: Coxville loam NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Wetland area has lots of humps and appears to have been dug out many, many years ago for the old rail bed. There are small areas of upland within the boundary of the wetland, but these are inconsequential. Field Sheet: 13-A-Wet 4 wetdp1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u><12 inches</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Inundated. Water likely due to runoff and depressional area.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-02-wet**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Quercus phellos</u>	<u>60</u>	<u>Y</u>	<u>FAC</u>
2	<u>Acer rubrum</u>	<u>10</u>	<u>N</u>	<u>FAC</u>
3				
4				
5				
6				
7				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 75.00% (A/B)

70 = Total Cover

50% of total cover: 35 20% of total cover: 14

Prevalence Index worksheet

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>135</u>	x 3 = <u>405</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>135</u>	(A) <u>405</u> (B)

Prevalence Index = B/A = 3.00

Sapling/Shrub Stratum (Plot Size: 15' radius)

1	<u>Acer rubrum</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>
2	<u>Liquidambar styraciflua</u>	<u>10</u>	<u>N</u>	<u>FAC</u>
3	<u>Pinus taeda</u>	<u>10</u>	<u>N</u>	<u>FAC</u>
4				
5				
6				
7				
8				
9				

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

60 = Total Cover

50% of total cover: 30 20% of total cover: 12

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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Herb Stratum (Plot Size: 5' radius)

1	<u>Carex spp.</u>	<u>5</u>	<u>Y</u>	
2	<u>Microstegium vimineum</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				
8				
9				
10				
11				

Hydrophytic Vegetation Present? Yes No

Woody Vine Stratum (Plot Size: 30' radius)

1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

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

Large oaks are present throughout the wetland with a few pines & sweetgums mixed in. Forest appears to be later successional than typical wetlands seen along the railway.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-02-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	2	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 9

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-02-wet Typical View of wetland



05-WTL-02-wet Inundation in wetland.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Hanover County Sampling Date: February 2, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-02-upl
 Investigator(s): L. Eggering, D. Mitchell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): slight hillslope Local relief (concave, convex, none): none Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.808356 Long: -77.46679 Datum: NAD-1983
 Soil Map Unit Name: Coxville loam NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u> X </u> Hydric Soil Present? Yes <u> </u> No <u> X </u> Wetland Hydrology Present? Yes <u> </u> No <u> X </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> X </u>
Remarks: This is the upland data point south of wetland 4. It is moderately well drained, and there are no hydric soils. Area is experiencing snow melt. Field Sheet: 13-A-WET-4 UP#1 Upland point for wetland 4.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u> X </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Soils moist, but not saturated. The area is moderately-well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-02-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Quercus rubra</u>	<u>80</u>	<u>Y</u>	<u>FACU</u>
2	<u>Fagus grandifolia</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>
3	<u>Liquidambar styraciflua</u>	<u>10</u>	<u>N</u>	<u>FAC</u>
4				
5				
6				
7				

120 = Total Cover

50% of total cover: 60 20% of total cover: 24

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Fagus spp.</u>	<u>15</u>	<u>Y</u>	
2				
3				
4				
5				
6				
7				
8				
9				

15 = Total Cover

50% of total cover: 7.5 20% of total cover: 3

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>2</u>		<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

2 = Total Cover

50% of total cover: 1 20% of total cover: 0.4

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Vitus spp.</u>	<u>2</u>	<u>Y</u>	
2	<u>Lonicera japonica</u>	<u>2</u>	<u>Y</u>	<u>FAC</u>
3	<u>Smilax spp.</u>	<u>1</u>	<u>Y</u>	
4				
5				

5 = Total Cover

50% of total cover: 2.5 20% of total cover: 1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 16.67% (A/B)

Prevalence Index worksheet

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>14</u>	x 3 = <u>42</u>
FACU species <u>110</u>	x 4 = <u>440</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>124</u>	(A) <u>482</u> (B)

Prevalence Index = B/A = 3.89

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

Understory mostly absent.

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 ¹	Loc2		
0-2	10YR 3 / 2	100					sandy loam	no mottling
2-12	10YR 4 / 3	100					sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 Mucky Mineral (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)		

³Indicators 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 **X** _____

Remarks:

Soils appear to be fairly well drained.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Hanover County Sampling Date: February 2, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-03-wet
 Investigator(s): L. Eggering, D. Mitchell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope seep Local relief (concave, convex, none): concave Slope (%): 3-4%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.788891 Long: -77.473039 Datum: NAD-1983
 Soil Map Unit Name: Udults-Ochrepts complex, sloping NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Small wetland area at base of rail ballast along gasoline corridor. Field Sheet: 13-A-WTL-6 Wet 1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>4</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Hydrology from seep area tht flows across gass corridor in to this lower, depressional area.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-03-wet**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Betula nigra</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>
2	<u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				

30 = Total Cover

50% of total cover: 15 20% of total cover: 6

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				

10 = Total Cover

50% of total cover: 5 20% of total cover: 2

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Carex spp.</u>	<u>5</u>	<u>Y</u>	
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

5 = Total Cover

50% of total cover: 2.5 20% of total cover: 1

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 75.00% (A/B)

Prevalence Index worksheet

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>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>40</u>	(A)	<u>100</u> (B)

Prevalence Index = B/A = 2.50

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Gas line corridor has herbs that have been mowed. Carex can be seen as well as Japanese stilt grass.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-03-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	0	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	0	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 2

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-03-wet Typical view of wetland in gasline ROW

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Hanover County Sampling Date: February 2, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-03-up1
 Investigator(s): L. Eggering, D. Mitchell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 14%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.788557 Long: -77.473157 Datum: NAD-1983
 Soil Map Unit Name: Udults-Ochrepts complex, sloping NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Adjacent upland area on west side of gas line corridor. Field Sheet: 13-A-WTL6 Up1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Area is very well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-03-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Juniperus virginiana</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>
2	<u>Quercus falcata</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>
3	<u>Liquidambar styraciflua</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
4	<u>Fagus grandifolia</u>	<u>5</u>	<u>N</u>	<u>FACU</u>
5				
6				
7				

50 = Total Cover
 50% of total cover: 25 20% of total cover: 10

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Pinus taeda</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>
2	<u>Quercus alba</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>
3				
4				
5				
6				
7				
8				
9				

10 = Total Cover
 50% of total cover: 5 20% of total cover: 2

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 40.00% (A/B)

Prevalence Index worksheet

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>20</u>	x 3 = <u>60</u>
FACU species <u>40</u>	x 4 = <u>160</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>60</u>	(A) <u>220</u> (B)

Prevalence Index = B/A = 3.67

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Hanover County Sampling Date: February 2, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-04-wet
 Investigator(s): L. Eggering, D. Mitchell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 3%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.775951 Long: -77.476307 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents, nearly level NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Wetland is approximately 20 feet wide averaged its length. It sits between the existing rail and Stream 13 and appears to flow north though it has little to no flow. Field Sheet: 13-A-Wet 5 Wet 1.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	___ Surface Soil Cracks (B6)
<u>X</u> Surface Water (A1)	___ Sparsely Vegetated Concave Surface (B8)
<u>X</u> High Water Table (A2)	___ Drainage Patterns (B10)
<u>X</u> 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)	___ Geomorphic Position (D2)
___ Iron Deposits (B5)	___ Shallow Aquitard (D3)
___ Inundation Visible on Aerial Imagery (B7)	___ Microtopographic Relief (D4)
___ Water-Stained Leaves (B9)	___ FAC-Neutral Test (D5)
___ Aquatic Fauna (B13)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>4</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Area could be borrow pit for the higher area adjacent to the west. This area is likely an old rail bed or logging road.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-04-wet**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
6				
7				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Amelanchier spp.</u>	<u>10</u>	<u>Y</u>	
2	<u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				
8				
9				

20 = Total Cover
 50% of total cover: 10 20% of total cover: 4

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Carex spp.</u>	<u>5</u>	<u>Y</u>	
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

5 = Total Cover
 50% of total cover: 2.5 20% of total cover: 1

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 33.33% (A/B)

Prevalence Index worksheet

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>0</u> x 4 = <u>0</u>
UPL species	<u>0</u> x 5 = <u>0</u>
Column totals	<u>10</u> (A) <u>30</u> (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No

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

There is little vegetation growing in the wetland. The adjacent upland has greenbrier, shortleaf pine & deciduous magnolia.

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 ¹		
0-3	10YR	3 / 1	100					90%organics
3-12+	10YR	2 / 1	100					mucky

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Dark Surface (S7)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> 2 cm Mucky Mineral (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" 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)
	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)
	<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147,148)
	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)
	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
	<input type="checkbox"/> Other (Explain in Remarks)

³Indicators 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:
Top layer is 90% organics with less organics in lower layer. The area has a sulfur smell and is very loose and mucky.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-04-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	0	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 4

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-04-wet

Typical view of wetland

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Hanover County Sampling Date: February 2, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-04-upl
 Investigator(s): L. Eggering, D. Mitchell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 10%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.775978 Long: -77.4763589 Datum: NAD-1983
 Soil Map Unit Name: Udults-Ochrepts complex, moderately steep NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u> X </u> Hydric Soil Present? Yes <u> </u> No <u> X </u> Wetland Hydrology Present? Yes <u> </u> No <u> X </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> X </u>
Remarks: Upland area to the west of the wetland. Field Sheet: 13-A-Wet-5 Up 1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u> X </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-04-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Quercus alba</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>
2	<u>Quercus falcata</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
3	<u>Quercus rubra</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
4	<u>Pinus echinata</u>	<u>10</u>	<u>Y</u>	
5				
6				
7				

50 = Total Cover
 50% of total cover: 25 20% of total cover: 10

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Magnoliaceae spp.</u>	<u>20</u>	<u>Y</u>	
2	<u>Quercus alba</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
3				
4				
5				
6				
7				
8				
9				

30 = Total Cover
 50% of total cover: 15 20% of total cover: 6

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Smilax spp.</u>	<u>5</u>	<u>Y</u>	
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

5 = Total Cover
 50% of total cover: 2.5 20% of total cover: 1

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 7 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index worksheet

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>50</u>	x 4 = <u>200</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>50</u>	(A) <u>200</u> (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

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 ¹	Loc2		
0-4	10YR 3 / 3	100					loam	organics
4-10	10YR 5 / 2	100					sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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"/> Piedmont Floodplain Soils (F19)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 2 cm Mucky Mineral (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)	
<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)		

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

Restrictive Layer (if observed):
 Type: rock
 Depth (inches): 10 Hydric soil present? Yes No

Remarks: **Refusal at 10" due to rock.**

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Hanover County Sampling Date: February 4, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-05-wet
 Investigator(s): L. Eggering, D. Mitchell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.774703 Long: -77.476308 Datum: NAD-1983
 Soil Map Unit Name: Udults-Ochrepts complex, moderately steep NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Linear wetland east of rail and north of Vaughn Road. Field Sheet: 13-A-WTL-2 wetdp1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>4-8</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Stream one that flows north on east side of rail, flows into this wetland. It is currently flowing (the stream) and is not likely an ephemeral channel. The wetland drains to the north by an ephemeral channel that is out of the study area.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-05-wet**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				

10 = Total Cover
 50% of total cover: 5 20% of total cover: 2

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				

5 = Total Cover
 50% of total cover: 2.5 20% of total cover: 1

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Carex spp.</u>	<u>5</u>	<u>Y</u>	
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

5 = Total Cover
 50% of total cover: 2.5 20% of total cover: 1

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Prevalence Index worksheet

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>15</u>	x 3 = <u>45</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>15</u>	(A) <u>45</u> (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-05-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.		
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.		
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.		
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.		
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.		
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.		

Total Score 0

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-05-wet Typical view of wetland north of Henry Road, looking south



05-WTL-05-wet Typical view of wetland along railroad

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Hanover County Sampling Date: February 4, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-05-upl
 Investigator(s): L. Eggering, D. Mitchell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 10
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.774702 Long: -77.476201 Datum: NAD-1983
 Soil Map Unit Name: Udults-Ochrepts complex, moderately steep NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u> X </u> Hydric Soil Present? Yes <u> </u> No <u> X </u> Wetland Hydrology Present? Yes <u> </u> No <u> X </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> X </u>
Remarks: Upslope to the east from wetland. Field Sheet: 13-A-WTL-2 up 1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u> X </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-05-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Platanus occidentalis</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>
2	<u>Ulnus spp.</u>	<u>15</u>	<u>Y</u>	
3	<u>Liquidambar styraciflua</u>	<u>10</u>	<u>N</u>	<u>FAC</u>
4	<u>Acer rubrum</u>	<u>10</u>	<u>N</u>	<u>FAC</u>
5	<u>Juniperus virginiana</u>	<u>5</u>	<u>N</u>	<u>FACU</u>
6				
7				

70 = Total Cover
 50% of total cover: 35 20% of total cover: 14

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Ilex opaca</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>
2	<u>Acer rubrum</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>
3	<u>Juniperus virginiana</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>
4				
5				
6				
7				
8				
9				

25 = Total Cover
 50% of total cover: 12.5 20% of total cover: 5

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera spp.</u>	<u>5</u>	<u>Y</u>	
2	<u>Smilax spp.</u>	<u>5</u>	<u>Y</u>	
3				
4				
5				
6				
7				
8				
9				
10				
11				

10 = Total Cover
 50% of total cover: 5 20% of total cover: 2

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 7 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 28.57% (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>30</u>	x 2 = <u>60</u>
FAC species <u>25</u>	x 3 = <u>75</u>
FACU species <u>25</u>	x 4 = <u>100</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>80</u>	(A) <u>235</u> (B)

Prevalence Index = B/A = 2.94

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 5 City/County: Ashland Sampling Date: August 1, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-06-wet
 Investigator(s): L. Eggering & L. Postaski Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.772354 Long: -77.478481 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents, nearly level NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u> No <u> </u>	

Remarks: **This is a man-made depressional wetland north of Vaughan Road. A culvert is present on the northeast end of the wetland. The culvert goes under a road that provides access to a sewage management facility. Fieldsheet: 13-A-WTL-3.**

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		<u> </u> Surface Soil Cracks (B6)
<u>X</u> Surface Water (A1)	<u> </u> Aquatic Fauna (B13)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> High Water Table (A2)	<u> </u> Marl Deposits (B15) (LRR U)	<u> </u> Drainage Patterns (B10)
<u>X</u> Saturation (A3)	<u>X</u> Hydrogen Sulfide Odor (C1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Water Marks (B1)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Sediment Deposits (B2)	<u> </u> Presence of Reduced Iron (C4)	<u> </u> Crayfish Burrows (C8)
<u> </u> Drift Deposits (B3)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Thin Muck Surface (C7)	<u> </u> Geomorphic Position (D2)
<u> </u> Iron Deposits (B5)	<u> </u> Other (Explain in Remarks)	<u> </u> Shallow Aquitard (D3)
<u> </u> Inundation Visible on Aerial Imagery (B7)		<u> </u> FAC-Neutral Test (D5)
<u>X</u> Water-Stained Leaves (B9)		<u> </u> Sphagnum moss (D8) (LRR T, U)

Field Observations:		Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface water present?	Yes <u>X</u> No <u> </u> Depth (inches): <u>0-2"</u>	
Water table present?	Yes <u> </u> No <u> </u> Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe)	Yes <u>X</u> No <u> </u> Depth (inches): <u>Surface</u>	

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

Remarks: **The wetland is adjacent to a gravel lot. The wetland likely received runoff from the lot.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-06-wet**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Leersia oryzoides	95	Y OBL
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

95 = Total Cover
 50% of total cover: **47.5** 20% of total cover: **19**

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)
 Total Number of Dominant Species Across all Strata: _____ (B)
 Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet
 Total % Cover of: _____ Multiply by: _____
 OBL species _____ x 1 = _____
 FACW species _____ x 2 = _____
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column totals _____ (A) _____ (B)
 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
 1 -Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 Problematic Hydrophytic Vegetation¹ (Explain)

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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No _____

Remarks: (If observed, list morphological adaptations below).
The wetland is dominated by ricecut grass.

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 ¹	Loc2		
0-4	10YR	5 / 2	95	10YR	6 / 1	5		Sandy loam	Organic matter.
4-12	10YR	6 / 1	100					Sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **There is a lot of organic matter present in the top four inches of the soil core.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-06-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 4

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-06-wet Wetland vegetation.



05-WTL-06-wet Wetland vegetation.



05-WTL-06-wet Wetland vegetation.



05-WTL-06-wet Culvert in wetland.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 5 City/County: Ashland Sampling Date: August 1, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-06-upl
 Investigator(s): L. Eggering & L. Postaski Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.772351 Long: -77.478369 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents, nearly level NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u> </u> Wetland Hydrology Present? Yes <u> </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: This upland point is located between a man-made depressional wetland and a gravel lot north of Vaughan Road.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u> </u> No <u> </u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u> </u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u> </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
---	---

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

Remarks: **The wetland is adjacent to a gravel lot. The wetland likely received runoff from the lot.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-06-upl**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Poa pratensis	80	Y	FACU
2 Trifolium repens	15	N	FACU
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

95 = Total Cover
 50% of total cover: **47.5** 20% of total cover: **19**

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index worksheet

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>95</u>	x 4 = <u>380</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>95</u> (A)	<u>380</u> (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No X

Remarks: (If observed, list morphological adaptations below).
The vegetation within the upland area appears to be regularly mowed.

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 ¹	Loc2		
0-12	10YR 5 / 4	100					Sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks: **The soils are well drained.**

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Hanover County Sampling Date: February 4, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-07-wet
 Investigator(s): L. Eggering, D. Mitchell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.748025 Long: -77.484492 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents, nearly level NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: **Along east side of center street south of Ashland in park area. Inundated area with wetland fringe.**
Field Sheet: 13-A-WTL-01 wet dp1.

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>4-6</u>	
Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u>	
Saturation present? (includes capillary fringe) Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Two 36" culverts drain this wetland to the west. Area acts as a catchment basin for stormwater.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-07-wet**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>
2	<u>Betula nigra</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>
3	<u>Acer rubrum</u>	<u>5</u>	<u>N</u>	<u>FAC</u>
4				
5				
6				
7				

75 = Total Cover
 50% of total cover: 37.5 20% of total cover: 15

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Carex spp.</u>	<u>5</u>	<u>Y</u>	
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

5 = Total Cover
 50% of total cover: 2.5 20% of total cover: 1

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>30</u>	x 2 = <u>60</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>75</u>	(A) <u>195</u> (B)

Prevalence Index = B/A = 2.60

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Area surrounding wetland is dense with privet, blackberry & smilax. Wetland is much less dense with large trees.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-07-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.		
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.		
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.		
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.		
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.		
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.		

Total Score 0

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-07-wet View of wetland in Carter Park



05-WTL-07-wet View of wetland in Carter Park



05-WTL-07-wet Culverts draining wetland

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-07-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2	<u>Quercus alba</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>
3	<u>Pinus taeda</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
4				
5				
6				
7				

70 = Total Cover
 50% of total cover: 35 20% of total cover: 14

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2	<u>Acer rubrum</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>
3	<u>Ilex opaca</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>
4				
5				
6				
7				
8				
9				

20 = Total Cover
 50% of total cover: 10 20% of total cover: 4

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2	<u>Smilax spp.</u>	<u>30</u>	<u>Y</u>	
3	<u>Ligustrum spp.</u>	<u>20</u>	<u>Y</u>	
4				
5				
6				
7				
8				
9				
10				
11				

80 = Total Cover
 50% of total cover: 40 20% of total cover: 16

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: 9 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 55.56% (A/B)

Prevalence Index worksheet

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>95</u>	x 3 = <u>285</u>
FACU species <u>25</u>	x 4 = <u>100</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>120</u>	(A) <u>385</u> (B)

Prevalence Index = B/A = 3.21

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

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 ¹	Loc2		
0-8	10YR 2 / 1	100					sandy clay	
8-12+	10YR 4 / 1	90	7.5YR 6 / 6	10			loam	faint redox

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> 2 cm Mucky Mineral (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)		

³Indicators 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:

Soils are reduced, but lack hydrology.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Hanover County Sampling Date: February 2, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-08-wet
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.744183 Long: -77.485551 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents, nearly level NWI classification: PFO/PSS

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes ___ No X (If no, explain in Remarks.)
 Are vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? No Are "normal circumstances" present? Yes X No ___
 Are vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (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 <u>X</u> No ___ Hydric Soil Present? Yes <u>X</u> No ___ Wetland Hydrology Present? Yes <u>X</u> No ___	Is the Sampled Area within a Wetland? Yes <u>X</u> No ___
Remarks: Data taken one week after a major snow storm. Wetland is in floodplain of Stony Run. Wetland receives seep from adjacent upland areas. This is a high quality wetland. Field Sheet: 13-B-WET-09, wetDP.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	___ Surface Soil Cracks (B6)
<u>X</u> Surface Water (A1)	___ Sparsely Vegetated Concave Surface (B8)
<u>X</u> High Water Table (A2)	___ Drainage Patterns (B10)
<u>X</u> 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)	___ Geomorphic Position (D2)
___ Iron Deposits (B5)	___ Shallow Aquitard (D3)
___ Inundation Visible on Aerial Imagery (B7)	___ Microtopographic Relief (D4)
<u>X</u> Water-Stained Leaves (B9)	___ FAC-Neutral Test (D5)
___ Aquatic Fauna (B13)	

Field Observations: Surface water present? Yes <u>X</u> No ___ Depth (inches): <u>1</u> Water table present? Yes <u>X</u> No ___ Depth (inches): <u>3</u> Saturation present? Yes <u>X</u> No ___ Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No ___
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Soils are saturated at surface. Surface water present throughout much of wetland. Seep water present from adjacent uplands.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-08-wet**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Platanus occidentalis</u>	<u>40</u>	<u>Y</u>	<u>FACW</u>
2	<u>Betula nigra</u>	<u>35</u>	<u>Y</u>	<u>FACW</u>
3	<u>Acer rubrum</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
4				
5				
6				
7				

95 = Total Cover
 50% of total cover: 47.5 20% of total cover: 19

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Alnus spp.</u>	<u>20</u>	<u>Y</u>	
2	<u>Betula nigra</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>
3	<u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
4				
5				
6				
7				
8				
9				

50 = Total Cover
 50% of total cover: 25 20% of total cover: 10

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Smilax spp.</u>	<u>10</u>	<u>Y</u>	
2	<u>Carex spp.</u>	<u>5</u>	<u>Y</u>	
3				
4				
5				
6				
7				
8				
9				
10				
11				

15 = Total Cover
 50% of total cover: 7.5 20% of total cover: 3

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: 8 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 62.50% (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>95</u>	x 2 = <u>190</u>
FAC species <u>30</u>	x 3 = <u>90</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>280</u> (B)

Prevalence Index = B/A = 2.24

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-08-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	3	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	3	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	2	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	3	

Total Score 14

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-08-wet Typical view of wetland



05-WTL-08-wet Typical view of wetland



05-WTL-08-wet Typical view of wetland



05-WTL-08-wet Wetland soil core



05-WTL-08-wet View of upland area



05-WTL-08-wet Upland soil core

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Hanover County Sampling Date: February 2, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-08-upl
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 40
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.744053 Long: -77.485626 Datum: NAD-1983
 Soil Map Unit Name: Udults-Ochrepts complex, sloping NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

Remarks: **Data collected one week after major snow storm. Soils are moderately to well drained. Upland is on a hillslope. Soils are likely disturbed due to railroad spurs and pipeline ROW.**
Field Sheet: 13-B-WET-09, UPDP.

HYDROLOGY

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

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

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are moderately to well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-08-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Juniperus virginiana</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>
2	<u>Pinus taeda</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
3	<u>Liquidambar styraciflua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
4				
5				
6				
7				

80 = Total Cover
 50% of total cover: 40 20% of total cover: 16

Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
2	<u>Juniperus virginiana</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>
3	<u>Ligustrum sinense</u>	<u>5</u>	<u>N</u>	<u>FACU</u>
4				
5				
6				
7				
8				
9				

45 = Total Cover
 50% of total cover: 22.5 20% of total cover: 9

Herb Stratum (Plot Size: <u>5' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Smilax spp.</u>	<u>15</u>	<u>Y</u>	
2	<u>Amaryllis spp.</u>	<u>10</u>	<u>Y</u>	
3				
4				
5				
6				
7				
8				
9				
10				
11				

25 = Total Cover
 50% of total cover: 12.5 20% of total cover: 5

Woody Vine Stratum (Plot Size: <u>30' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Campsis radicans</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				

30 = Total Cover
 50% of total cover: 15 20% of total cover: 6

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across all Strata: 8 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

Prevalence Index worksheet

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>65</u>	x 4 =	<u>260</u>
UPL species <u>0</u>	x 5 =	<u>0</u>
Column totals <u>155</u>	(A)	<u>530</u> (B)

Prevalence Index = B/A = 3.42

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Hanover County Sampling Date: February 2, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-09-wet
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.742021 Long: -77.486291 Datum: NAD-1983
 Soil Map Unit Name: Kempsville-Bourne fine sandy loams, 2 to 7 percent slopes NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes ___ No X (If no, explain in Remarks.)
 Are vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? No Are "normal circumstances" present? Yes X No ___
 Are vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (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 <u>X</u> No ___ Hydric Soil Present? Yes <u>X</u> No ___ Wetland Hydrology Present? Yes <u>X</u> No ___	Is the Sampled Area within a Wetland? Yes <u>X</u> No ___
Remarks: Data taken one week after a major snow storm. Wetland is an isolated depression within the railroad ditch. It receives drainage from adjacent field and railroad ditch upstream. Field Sheet: 13-B-WET-10, wetDP.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	___ Surface Soil Cracks (B6)
<u>X</u> Surface Water (A1)	___ Sparsely Vegetated Concave Surface (B8)
___ High Water Table (A2)	___ Drainage Patterns (B10)
<u>X</u> 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)	___ Geomorphic Position (D2)
___ Iron Deposits (B5)	___ Shallow Aquitard (D3)
___ Inundation Visible on Aerial Imagery (B7)	___ Microtopographic Relief (D4)
___ Water-Stained Leaves (B9)	___ FAC-Neutral Test (D5)
___ Aquatic Fauna (B13)	
___ True Aquatic Plants (B14)	
___ Hydrogen Sulfide Odor (C1)	
<u>X</u> Oxidized Rhizospheres on Living Roots (C3)	
___ Presence of Reduced Iron (C4)	
___ Recent Iron Reduction in Tilled Soils (C6)	
___ Thin Muck Surface (C7)	
___ Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u>X</u> No ___ Depth (inches): <u>5</u> Water table present? Yes ___ No <u>X</u> Depth (inches): ___ Saturation present? Yes <u>X</u> No ___ Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No ___
--	---

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

Remarks: **Isolated wetland that receives drainage from adjacent field and railroad ditch upstream.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-09-wet**

Tree Stratum	(Plot Size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: 15' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Scirpus georgianus	35	Y	OBL
2	Juncus effusus	10	N	FACW
3	Andropogon virginicus	10	N	FACU
4	Lonicera japonica	5	N	FAC
5				
6				
7				
8				
9				
10				
11				

60 = Total Cover

50% of total cover: **30** 20% of total cover: **12**

Woody Vine Stratum	(Plot Size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: _____ (B)

Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	_____ x 1 = _____
FACW species	_____ x 2 = _____
FAC species	_____ x 3 = _____
FACU species	_____ x 4 = _____
UPL species	_____ x 5 = _____
Column totals	_____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-09-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 4

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-09-wet Typical view of wetland



05-WTL-09-wet Typical view of wetland



05-WTL-09-wet Typical view of wetland



05-WTL-09-wet Closer look at wetland plants



05-WTL-09-wet View of upland area



05-WTL-09-wet Upland soil core

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Hanover County Sampling Date: February 2, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-09-upl
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 20
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.74202 Long: -77.486291 Datum: NAD-1983
 Soil Map Unit Name: Kempsville-Bourne fine sandy loams, 2 to 7 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

Remarks: **Data collected one week after major snow storm. Upland area is disturbed (fill). Soils are well drained.**
Field Sheet: 13-B-WET-10&11, UPDP.

HYDROLOGY

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

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

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-09-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
6				
7				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Juniperus virginiana</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>
2	<u>Liquidambar styraciflua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
3	<u>Rhus glabra</u>	<u>15</u>	<u>N</u>	
4	<u>Pinus taeda</u>	<u>15</u>	<u>N</u>	<u>FAC</u>
5				
6				
7				
8				
9				

80 = Total Cover
 50% of total cover: 40 20% of total cover: 16

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Sorghastrum nutans</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>
2	<u>Andropogon virginicus</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
3	<u>Rubus spp.</u>	<u>10</u>	<u>Y</u>	
4	<u>Lonicera japonica</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
5	<u>Solidago spp.</u>	<u>10</u>	<u>Y</u>	
6				
7				
8				
9				
10				
11				

70 = Total Cover
 50% of total cover: 35 20% of total cover: 14

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 7 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 28.57% (A/B)

Prevalence Index worksheet

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>45</u> x 3 = <u>135</u>
FACU species	<u>70</u> x 4 = <u>280</u>
UPL species	<u>0</u> x 5 = <u>0</u>
Column totals	<u>115</u> (A) <u>415</u> (B)

Prevalence Index = B/A = 3.61

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

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 ¹	Loc2		
0-3	5Y 3 / 2	100					silty clay loam	
3-12	10YR 5 / 8	100					clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 Mucky Mineral (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)		

³Indicators 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 **X**

Remarks:

Soils disturbed (fill).

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Hanover County Sampling Date: February 2, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-10-wet
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.740394 Long: -77.486809 Datum: NAD-1983
 Soil Map Unit Name: Bourne fine sandy loam, 2 to 7 percent slopes NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Data taken one week after a major snow storm. Soils disturbed by railroad development and fill material. Wetland is a railroad ditch. Low quality wetland. Field Sheet: 13-B-WET-11, wetDP.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0-12</u> Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>surface</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Hydrology mainly comes from runoff from adjacent developed area.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-10-wet**

Tree Stratum	(Plot Size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: 15' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Scirpus georgianus	10	Y	OBL
2	Juncus effusus	10	Y	FACW
3	Andropogon virginicus	10	Y	FACU
4	Lonicera japonica	10	Y	FAC
5				
6				
7				
8				
9				
10				
11				

40 = Total Cover
 50% of total cover: **20** 20% of total cover: **8**

Woody Vine Stratum	(Plot Size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **3** (A)

Total Number of Dominant Species Across all Strata: **4** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **75.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	10 x 1 = 10
FACW species	10 x 2 = 20
FAC species	10 x 3 = 30
FACU species	10 x 4 = 40
UPL species	0 x 5 = 0
Column totals	40 (A) 100 (B)

Prevalence Index = B/A = **2.50**

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

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 ¹	Loc2		
0-4	5Y 3 / 2	100					sandy loam	
4-12	5Y 2.5 / 2	100					sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 Mucky Mineral (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 checked="" 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)		

³Indicators 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:

Soils are significantly disturbed. Area has lots of fill material.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-10-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 6

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-10-wet Typical view of wetland



05-WTL-10-wet Typical view of wetland



05-WTL-10-wet Typical view of wetland



05-WTL-10-wet Typical view of wetland



05-WTL-10-wet Typical view of wetland



05-WTL-10-wet Wetland soil core

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Hanover County Sampling Date: February 2, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-10-upl
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 20
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.74202 Long: -77.486291 Datum: NAD-1983
 Soil Map Unit Name: Kempsville-Bourne fine sandy loams, 2 to 7 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Data collected one week after major snow storm. Upland area is disturbed (fill). Soils are well drained. Field Sheet: 13-B-WET-10&11, UPDP.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input 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"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> True Aquatic Plants (B14)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

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

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

Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-10-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Juniperus virginiana</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>
2	<u>Liquidambar styraciflua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
3	<u>Rhus glabra</u>	<u>15</u>	<u>N</u>	
4	<u>Pinus taeda</u>	<u>15</u>	<u>N</u>	<u>FAC</u>
5				
6				
7				
8				
9				

80 = Total Cover

50% of total cover: 40 20% of total cover: 16

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Sorghastrum nutans</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>
2	<u>Andropogon virginicus</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
3	<u>Rubus spp.</u>	<u>10</u>	<u>Y</u>	
4	<u>Lonicera japonica</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
5	<u>Solidago spp.</u>	<u>10</u>	<u>Y</u>	
6				
7				
8				
9				
10				
11				

70 = Total Cover

50% of total cover: 35 20% of total cover: 14

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 7 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 28.57% (A/B)

Prevalence Index worksheet

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>45</u> x 3 =	<u>135</u>
FACU species	<u>70</u> x 4 =	<u>280</u>
UPL species	<u>0</u> x 5 =	<u>0</u>
Column totals	<u>115</u> (A)	<u>415</u> (B)

Prevalence Index = B/A = 3.61

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

SOIL

Sampling Point: 05-WTL-10-upl

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 ¹	Loc2		
0-3	5Y 3 / 2	100					silty clay loam	
3-12	10YR 5 / 8	100					clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 Mucky Mineral (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)		

³Indicators 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 **X**

Remarks:

Soils disturbed (fill).

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Hanover County Sampling Date: February 2, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-11-wet
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.737001 Long: -77.487822 Datum: NAD-1983
 Soil Map Unit Name: Dunbar fine sandy loam NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Data taken one week after a major snow storm. Large wetland likely connected to Stony Run. Surface water throughout most of wetland. Buttressed trees. Field Sheet: 13-B-WET-12, wetDP.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<input checked="" 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"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> True Aquatic Plants (B14)	
<input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>1-4</u> Water table present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>2</u> Saturation present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>surface</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Surface water present throughout most of wetland. Trees are buttressed. Some trees have moss trim lines.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-11-wet**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>
2	<u>Pinus taeda</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
3	<u>Acer rubrum</u>	<u>10</u>	<u>N</u>	<u>FAC</u>
4				
5				
6				
7				

70 = Total Cover
 50% of total cover: 35 20% of total cover: 14

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2	<u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				
8				
9				

20 = Total Cover
 50% of total cover: 10 20% of total cover: 4

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Glyceria striata</u>	<u>30</u>	<u>Y</u>	<u>OBL</u>
2	<u>Carex spp.</u>	<u>10</u>	<u>Y</u>	
3				
4				
5				
6				
7				
8				
9				
10				
11				

40 = Total Cover
 50% of total cover: 20 20% of total cover: 8

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

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

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

Percent of Dominant Species that are OBL, FACW, or FAC: 83.33% (A/B)

Prevalence Index worksheet

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>90</u>	x 3 =	<u>270</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>300</u> (B)

Prevalence Index = B/A = 2.50

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-11-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	3	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	3	

Total Score 12

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-11-wet Typical view of wetland adjacent railroad (right)



05-WTL-11-wet Typical view of wetland



05-WTL-11-wet Typical view of wetland



05-WTL-11-wet Typical view of wetland adjacent railroad (right)



05-WTL-11-wet Wetland soil core



05-WTL-11-wet View of upland area

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Hanover County Sampling Date: February 2, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-11-upl
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 10%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.736357 Long: -77.488076 Datum: NAD-1983
 Soil Map Unit Name: Udults-Ochrepts complex, sloping NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

Remarks: **Data collected one week after major snow storm. Soils are moderately to well drained.**
Field Sheet: 13-B-WET-12, UPDP.

HYDROLOGY

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

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

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

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-11-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Quercus phellos</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>
2	<u>Liquidambar styraciflua</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
3	<u>Pinus taeda</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
4				
5				
6				
7				

100 = Total Cover

50% of total cover: 50

20% of total cover: 20

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Juniperus virginiana</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
2	<u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3	<u>Ilex opaca</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
4				
5				
6				
7				
8				
9				

30 = Total Cover

50% of total cover: 15

20% of total cover: 6

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Vinca minor</u>	<u>70</u>	<u>Y</u>	
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

70 = Total Cover

50% of total cover: 35

20% of total cover: 14

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Campsis radicans</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				

20 = Total Cover

50% of total cover: 10

20% of total cover: 4

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: 8 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 62.50% (A/B)

Prevalence Index worksheet

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>130</u>	x 3 =	<u>390</u>
FACU species <u>20</u>	x 4 =	<u>80</u>
UPL species <u>0</u>	x 5 =	<u>0</u>
Column totals <u>150</u>	(A)	<u>470</u> (B)

Prevalence Index = B/A = 3.13

Hydrophytic Vegetation Indicators:

- 1 -Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is ≤3.0¹
- 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Wyndam Sampling Date: February 3, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-12-wet
 Investigator(s): D. Mitchell & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Bottomland Local relief (concave, convex, none): Concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.729005 Long: -77.490945 Datum: NAD-1983
 Soil Map Unit Name: Aquults, nearly level NWI classification: PFO/PSS

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: The data was collected one week after a major snow storm. This is a bottomland hardwood forest. Surface water is present throughout most of the wetland. Field Sheet: 13-C-WTL-07-wet.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>2"</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>1"</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>Surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Surface water is present throughout most of the wetland. A few moss trimmed tree lines are present in deeper water. Buttressed trees observed.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-12-wet**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Acer rubrum</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
2 <u>Liquidambar styraciflua</u>	<u>10</u>	<u>N</u>	<u>FAC</u>
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			

30 = Total Cover
 50% of total cover: 15 20% of total cover: 6

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Cephalanthus occidentalis</u>	<u>30</u>	<u>Y</u>	<u>OBL</u>
2 <u>Ilex opaca</u>	<u>5</u>	<u>N</u>	<u>FAC</u>
3 <u>Quercus alba</u>	<u>2</u>	<u>N</u>	<u>FACU</u>
4 <u>Quercus falcata</u>	<u>2</u>	<u>N</u>	<u>FACU</u>
5 _____			
6 _____			
7 _____			
8 _____			

39 = Total Cover
 50% of total cover: 19.5 20% of total cover: 7.8

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 _____			<u>FAC</u>
2 _____			
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			
9 _____			
10 _____			
11 _____			
12 _____			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 _____	<u>10</u>		
2 _____			
3 _____			
4 _____			
5 _____			

10 = Total Cover
 50% of total cover: 5 20% of total cover: 2

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index worksheet

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>35</u>	x 3 = <u>105</u>
FACU species <u>4</u>	x 4 = <u>16</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>69</u> (A)	<u>151</u> (B)

Prevalence Index = B/A = 2.19

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).
Most of the herbaceous layer is absent.

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 ¹	Loc ²		
0-2	2.5YR	2 / 1	100					Sandy clay	Organic material present.
2-12	2.5YR	6 / 2	80	2.5YR	6 / 6	20		Sandy clay	
								Clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

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

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric soil present? Yes X No _____

Remarks:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-12-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	2	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	2	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 12

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-12-wet

Bottomland forested wetland.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Wyndam Sampling Date: February 3, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-12-upl
 Investigator(s): D. Mitchell & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Bottomland Local relief (concave, convex, none): None Slope (%): 5%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.728858 Long: -77.490928 Datum: NAD-1983
 Soil Map Unit Name: Duplin fine sandy loam, 2 to 7 percent slopes NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: The data was collected one week after a major snow storm. The upland is within a bottomland forest. Northern red oak and white oak are the dominant species. The soils are well drained. Field Sheet: 13-C-WTL-07-upl.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-12-upl**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Quercus rubra</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>
2 <u>Quercus alba</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			

60 = Total Cover
 50% of total cover: 30 20% of total cover: 12

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2 _____			
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			

10 = Total Cover
 50% of total cover: 5 20% of total cover: 2

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 _____			
2 _____			
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			
9 _____			
10 _____			
11 _____			
12 _____			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 _____			
2 _____			
3 _____			
4 _____			
5 _____			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 33.33% (A/B)

Prevalence Index worksheet

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>60</u>	x 4 = <u>240</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>70</u> (A)	<u>270</u> (B)

Prevalence Index = B/A = 3.86

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No X

Remarks: (If observed, list morphological adaptations below).
The herbaceous layer is nearly absent.

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 ¹	Loc2		
0-2		100					Loam	Organic material present.
2-4	10YR 2 / 1	100					Loam	Organic material present.
4-12	10YR 4 / 3	100					Sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	(MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators 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 X

Remarks: **Soils are well drained.**

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Wyndam Sampling Date: February 3, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-13-wet
 Investigator(s): D. Mitchell & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Bottomland Local relief (concave, convex, none): Concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.726454 Long: -77.491705 Datum: NAD-1983
 Soil Map Unit Name: Aquults, nearly level NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: The data was collected one week after a major snow storm. This is a bottomland hardwood wetland with a high water table. Loblolly pine is the dominant tree species. Field Sheet: 13-C-WTL-06-wet.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>1"</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>Surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	--

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

Remarks: **Soils are saturated throughout the soil core. A high water table is present.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-13-wet**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Pinus taeda</u>	<u>60</u>	<u>Y</u>	<u>FAC</u>
2 <u>Liquidambar styraciflua</u>	<u>20</u>	<u>N</u>	<u>FAC</u>
3 <u>Acer rubrum</u>	<u>10</u>	<u>N</u>	<u>FAC</u>
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			

90 = Total Cover
 50% of total cover: 45 20% of total cover: 18

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Liquidambar styraciflua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
2 <u>Ilex opaca</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			

30 = Total Cover
 50% of total cover: 15 20% of total cover: 6

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Pinus taeda</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2 _____			
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			
9 _____			
10 _____			
11 _____			
12 _____			

10 = Total Cover
 50% of total cover: 5 20% of total cover: 2

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Smilax glauca</u>	<u>10</u>		<u>FAC</u>
2 _____			
3 _____			
4 _____			
5 _____			

10 = Total Cover
 50% of total cover: 5 20% of total cover: 2

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index worksheet

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>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>140</u> (A)	<u>420</u> (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).
Club moss is present in the herbaceous layer.

SOIL

Sampling Point: 05-WTL-13-wet

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 ¹		
0-3	10YR	2 / 1	100					Loam Organic material present.
3-8	2.5YR	4 / 1	97	2.5YR 6 / 6	3			Sandy clay
8-12	2.5YR	6 / 2	80	2.5YR 6 / 6	20			Clay

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	(MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

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

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric soil present? Yes X No _____

Remarks:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-13-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	2	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 11

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-13-wet

Bottomland forested wetland.

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-13-upl**

Tree Stratum (Plot Size: 30' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Pinus taeda	65	Y	FAC
2	Liquidambar styraciflua	25	Y	FAC
3	Acer rubrum	10	N	FAC
4				
5				
6				
7				
8				

100 = Total Cover
 50% of total cover: **50** 20% of total cover: **20**

Sapling/Shrub Stratum (Plot Size: 15' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Acer rubrum	30	Y	FAC
2	Juniperus virginiana	10	Y	FACU
3	Ilex opaca	5	N	FAC
4				
5				
6				
7				
8				

45 = Total Cover
 50% of total cover: **22.5** 20% of total cover: **9**

Herb Stratum (Plot Size: 5' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Woody Vine Stratum (Plot Size: 15' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **3** (A)

Total Number of Dominant Species Across all Strata: **4** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **75.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 135	x 3 = 405
FACU species 10	x 4 = 40
UPL species 0	x 5 = 0
Column totals 145 (A)	445 (B)

Prevalence Index = B/A = **3.07**

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).
The herbaceous layer is nearly absent.

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 ¹	Loc2		
0-4	10YR	5 / 3	100					Loam	
4-12	10YR	5 / 4	90	7.5YR	5 / 8	10		Clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks: **Soils are well drained.**

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Wyndam Sampling Date: February 3, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-14-wet
 Investigator(s): D. Mitchell & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Bottomland Local relief (concave, convex, none): None Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.723846 Long: -77.492523 Datum: NAD-1983
 Soil Map Unit Name: Dunbar fine sandy loam NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u> No <u> </u>	

Remarks: **The data was collected one week after a major snow storm. This is a bottomland hardwood wetland containing willow oak, sweetgum, and loblolly pine. Soils are saturated with some small surface water pools throughout the area.**
Field Sheet: 13-C-WTL-05-wet.

HYDROLOGY

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

Field Observations:		Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface water present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Water table present?	Yes <u>X</u> No <u> </u> Depth (inches): <u>3"</u>	
Saturation present? (includes capillary fringe)	Yes <u>X</u> No <u> </u> Depth (inches): <u>Surface</u>	

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

Remarks: **Soils are saturated with some small surface water pools throughout the area. The pools were not near the data point.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-14-wet**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Quercus phellos</u>	40	Y	FACW
2 <u>Liquidambar styraciflua</u>	30	N	FAC
3 <u>Pinus taeda</u>	30	N	FAC
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			

100 = Total Cover
 50% of total cover: **50** 20% of total cover: **20**

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Clethra alnifolia</u>	25	Y	FACW
2 _____			
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			

25 = Total Cover
 50% of total cover: **12.5** 20% of total cover: **5**

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Pinus taeda</u>	15	Y	FAC
2 _____			
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			
9 _____			
10 _____			
11 _____			
12 _____			

15 = Total Cover
 50% of total cover: **7.5** 20% of total cover: **3**

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 _____			
2 _____			
3 _____			
4 _____			
5 _____			

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **3** (A)

Total Number of Dominant Species Across all Strata: **3** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **100.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 65	x 2 = 130
FAC species 75	x 3 = 225
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column totals 140 (A)	355 (B)

Prevalence Index = B/A = **2.54**

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).
Club moss is present in the herbaceous layer.

SOIL

Sampling Point: 05-WTL-14-wet

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 ¹	Loc ²		
0-3	10YR	2 / 1	100					Silt loam	Organic material present.
3-12	10YR	4 / 1	95	10YR	5 / 6	5		Silty clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	(MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

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

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric soil present? Yes X No _____

Remarks:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-14-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 10

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-14-wet Wetland habitat.



05-WTL-14-wet Habitat near wetland boundary.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Elmont Sampling Date: February 3, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-14-upl
 Investigator(s): D. Mitchell & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 15%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.723846 Long: -77.492206 Datum: NAD-1983
 Soil Map Unit Name: Dunbar fine sandy loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: The data was collected one week after a major snow storm. The soils are well drained. Field Sheet: 13-C-WTL-05-upl.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? (includes capillary fringe) Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-14-upl**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Pinus taeda</u>	<u>60</u>	<u>Y</u>	<u>FAC</u>
2 <u>Liquidambar styraciflua</u>	<u>20</u>		<u>FAC</u>
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			

80 = Total Cover
 50% of total cover: 40 20% of total cover: 16

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Pinus taeda</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2 <u>Ilex opaca</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3 <u>Quercus falcata</u>	<u>5</u>	<u>N</u>	<u>FACU</u>
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			

45 = Total Cover
 50% of total cover: 22.5 20% of total cover: 9

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 _____			
2 _____			
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			
9 _____			
10 _____			
11 _____			
12 _____			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 _____			
2 _____			
3 _____			
4 _____			
5 _____			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index worksheet

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>120</u>	x 3 = <u>360</u>
FACU species <u>5</u>	x 4 = <u>20</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>125</u> (A)	<u>380</u> (B)

Prevalence Index = B/A = 3.04

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 X 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes X No

Remarks: (If observed, list morphological adaptations below).

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 ¹	Loc2		
0-10	10YR	2 / 1	100					Silt loam	Coal ash.
10-12	10YR	5 / 3	100					Silt loam	Coal ash.

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	(MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators 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 X

Remarks: **Soils are well drained. Soils are black and contain coal ash.**

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Elmont Sampling Date: February 3, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-15-wet
 Investigator(s): D. Mitchell & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.72105 Long: -77.493259 Datum: NAD-1983
 Soil Map Unit Name: Dunbar fine sandy loam NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: The data was collected one week after a major snow storm. This wetland is marginal with low functional values. Some areas have standing water. Field Sheet: 13-C-WTL-04-wet.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>2"</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>Surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Surface water pools are present in some areas of the wetland. The hydrology is marginal.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-15-wet**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Liquidambar styraciflua</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2 <u>Pinus taeda</u>	<u>30</u>		<u>FAC</u>
3 <u>Acer rubrum</u>	<u>30</u>		<u>FAC</u>
4 <u>Ulmus rubra</u>	<u>10</u>		<u>FAC</u>
5			
6			
7			
8			

100 = Total Cover
 50% of total cover: 50 20% of total cover: 20

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Ilex opaca</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2 <u>Juniperus virginiana</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>
3			
4			
5			
6			
7			
8			

15 = Total Cover
 50% of total cover: 7.5 20% of total cover: 3

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Lonicera japonica</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2 <u>Carex frankii</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>
3 <u>Pinus taeda</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>
4			
5			
6			
7			
8			
9			
10			
11			
12			

25 = Total Cover
 50% of total cover: 12.5 20% of total cover: 5

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Smilax glauca</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
2			
3			
4			
5			

15 = Total Cover
 50% of total cover: 7.5 20% of total cover: 3

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: 7 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 85.71% (A/B)

Prevalence Index worksheet

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>140</u>	x 3 = <u>420</u>
FACU species <u>5</u>	x 4 = <u>20</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>155</u> (A)	<u>450</u> (B)

Prevalence Index = B/A = 2.90

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).

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 ¹	Loc ²		
0-8	10YR	4 / 1	100					Silty clay	
8-12	10YR	5 / 1	100					Silty clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-15-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 9

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-15-wet Wetland with visible surface water pools.



05-WTL-15-wet Wetland with visible water stained leaves.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Elmont Sampling Date: February 3, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-15-upl
 Investigator(s): D. Mitchell & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 15%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.721282 Long: -77.493138 Datum: NAD-1983
 Soil Map Unit Name: Dunbar fine sandy loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u>X</u>	No <u>X</u>	

Remarks: **The data was collected one week after a major snow storm. The soils are well drained. Soils are influenced by railroad activities. Field Sheet: 13-C-WTL-04-upl.**

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? (includes capillary fringe) Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-15-upl**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <i>Juniperus virginiana</i>	10	Y	FACU
2 <i>Pinus taeda</i>	10	Y	FAC
3			
4			
5			
6			
7			
8			

20 = Total Cover
 50% of total cover: 10 20% of total cover: 4

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <i>Setaria faberi</i>	30	Y	UPL
2 <i>Festuca arundinacea</i>	15	Y	FAC
3 <i>Verbascum thapsus</i>	15	Y	FACU
4 <i>Schizachyrium scoparium</i>	10	N	FACU
5			
6			
7			
8			
9			
10			
11			
12			

70 = Total Cover
 50% of total cover: 35 20% of total cover: 14

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 40.00% (A/B)

Prevalence Index worksheet

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>35</u>	x 4 = <u>140</u>
UPL species <u>30</u>	x 5 = <u>150</u>
Column totals <u>90</u> (A)	<u>365</u> (B)

Prevalence Index = B/A = 4.06

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No X

Remarks: (If observed, list morphological adaptations below).

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 ¹	Loc2		
0-12		100						Coal ash.

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	(MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators 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 X

Remarks: **Soils are well drained. Soils are black and primarily coal ash.**

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Elmont Sampling Date: February 3, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-16-wet
 Investigator(s): D. Mitchell & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.718991 Long: -77.493897 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents, nearly level NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: The data was collected one week after a major snow storm. This wetland is in the floodplain of a stream. The area lies within a pasture. Field Sheet: 13-C-WTL-03-wet.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>2"</u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? (includes capillary fringe) Yes <u>X</u> No <u> </u> Depth (inches): <u>Surface</u>	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	--

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

Remarks: **The surface water present is likely due to snow melt and recent rains. The wetland drains into a stream and through a culvert. The hydrology likely comes from hillside seeps.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-16-wet**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Quercus phellos	50	Y	FACW
2			
3			
4			
5			
6			
7			
8			

50 = Total Cover
 50% of total cover: **25** 20% of total cover: **10**

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Festuca arundinacea	60	Y	FAC
2 Juncus effusus	30	Y	OBL
3 Carex frankii	10	N	OBL
4			
5			
6			
7			
8			
9			
10			
11			
12			

100 = Total Cover
 50% of total cover: **50** 20% of total cover: **20**

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **3** (A)

Total Number of Dominant Species Across all Strata: **3** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **100.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 40	x 1 = 40
FACW species 50	x 2 = 100
FAC species 60	x 3 = 180
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column totals 150 (A)	320 (B)

Prevalence Index = B/A = **2.13**

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 05-WTL-16-wet

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 ¹	Loc ²		
0-3	10YR	3 / 1	100					Silty clay	
3-12	10YR	4 / 1	90	7.5YR	6 / 8	10		Sandy clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	(MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

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

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric soil present? Yes X No _____

Remarks:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-16-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	2	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 11

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-16-wet Wetland with visible surface water.



05-WTL-16-wet Wetland with visible surface water.



05-WTL-16-wet Wetland vegetation along stream.



05-WTL-16-wet Culvert receiving wetland drainage.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Elmont Sampling Date: February 3, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-16-upl
 Investigator(s): D. Mitchell & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 25%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.719009 Long: -77.493889 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents, nearly level NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: The data was collected one week after a major snow storm. The data point is located on a high area adjacent to another wetland. Field Sheet: 13-C-WTL-03-upl.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-16-upl**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Quercus phellos</u>	<u>70</u>	<u>Y</u>	<u>FACW</u>
2 <u>Acer rubrum</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			

95 = Total Cover
 50% of total cover: 47.5 20% of total cover: 19

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Juniperus virginiana</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
2 _____			
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			

10 = Total Cover
 50% of total cover: 5 20% of total cover: 2

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Festuca arundinacea</u>	<u>25</u>	<u>Y</u>	<u>UPL</u>
2 <u>Ilex opaca</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3 <u>Juniperus virginiana</u>	<u>5</u>	<u>N</u>	<u>FACU</u>
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			
9 _____			
10 _____			
11 _____			
12 _____			

40 = Total Cover
 50% of total cover: 20 20% of total cover: 8

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 _____			
2 _____			
3 _____			
4 _____			
5 _____			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 60.00% (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>70</u>	x 2 = <u>140</u>
FAC species <u>35</u>	x 3 = <u>105</u>
FACU species <u>15</u>	x 4 = <u>60</u>
UPL species <u>25</u>	x 5 = <u>125</u>
Column totals <u>145</u> (A)	<u>430</u> (B)

Prevalence Index = B/A = 2.97

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 05-WTL-16-upl

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 ¹	Loc2		
0-2	10YR	3 / 2	100					Silt loam	
2-12	2.5YR	5 / 8	100					Clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	(MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators 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 X

Remarks: **Soils are well drained.**

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Elmont Sampling Date: February 3, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-17-wet
 Investigator(s): D. Mitchell & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Ditch Local relief (concave, convex, none): Concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.715688 Long: -77.494827 Datum: NAD-1983
 Soil Map Unit Name: Aquults, nearly level NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: **The data was collected one week after a major snow storm. This is a railroad ditch wetland that drains to the north. The upper three inches of soil contain coal ash, common along railways.**
Field Sheet: 13-C-WTL-01-wet.

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>6"</u>	
Water table present? Yes <u> </u> No <u> </u> Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe) Yes <u>X</u> No <u> </u> Depth (inches): <u>Surface</u>	

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

Remarks: **Surface water is present throughout the ditch. The wetland drains to the north and into a small stream.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-17-wet**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	
1	Juncus effusus	10	Y	OBL
2	Scirpus cyperinus	10	Y	OBL
3	Carex frankii	10	Y	OBL
4				
5				
6				
7				
8				
9				
10				
11				
12				

30 = Total Cover

50% of total cover: **15** 20% of total cover: **6**

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: _____ (B)

Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column totals _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).

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 ¹	Loc ²		
0-3	10YR	4 / 1	100					Sandy loam	
3-12	10YR	6 / 1	80	10YR	6 / 8	20		Clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **The upper three inches are disturbed. Soil contains coal ash.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-17-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 6

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-17-wet Railroad ditch wetland along ballast.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Elmont Sampling Date: February 3, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-17-upl
 Investigator(s): D. Mitchell & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 5%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.715525 Long: -77.494871 Datum: NAD-1983
 Soil Map Unit Name: Aquults, nearly level NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: The data was collected one week after a major snow storm. Soils are disturbed by railroad activities. Soils are well drained. Field Sheet: 13-C-WTL-01-upl.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **The soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-17-upl**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Pinus taeda	10	Y	FAC
2			
3			
4			
5			
6			
7			
8			

10 = Total Cover
 50% of total cover: **5** 20% of total cover: **2**

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Juniperus virginiana	25	Y	FACU
2			
3			
4			
5			
6			
7			
8			

25 = Total Cover
 50% of total cover: **12.5** 20% of total cover: **5**

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Festuca arundinacea	25	Y	UPL
2 Lonicera japonica	10	Y	FACU
3 Verbascum thapsus	10	Y	FACU
4 Schizachyrium scoparium	10	Y	FACU
5			
6			
7			
8			
9			
10			
11			
12			

55 = Total Cover
 50% of total cover: **27.5** 20% of total cover: **11**

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **1** (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: **16.67%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 10	x 3 = 30
FACU species 55	x 4 = 220
UPL species 25	x 5 = 125
Column totals 90 (A)	375 (B)

Prevalence Index = B/A = **4.17**

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No **X**

Remarks: (If observed, list morphological adaptations below).

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 ¹	Loc2		
0-12	10YR	5 / 4	100				Sandy loam	Soils are disturbed.

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks: **The soils are disturbed by railroad activities. Soils are coal-like and gritty.**

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Elmont Sampling Date: February 3, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-18-wet
 Investigator(s): D. Mitchell & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.715801 Long: -77.494998 Datum: NAD-1983
 Soil Map Unit Name: Aquults, nearly level NWI classification: PFO/PSS

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u> No <u> </u>	

Remarks: **The data was collected one week after a major snow storm. This is a forested bottomland hardwood wetland, typical of the area. Surface water is present through much of the wetland. Field Sheet: 13-C-WTL-02-wet.**

HYDROLOGY

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

Field Observations:		Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface water present?	Yes <u>X</u> No <u> </u> Depth (inches): <u>2"</u>	
Water table present?	Yes <u>X</u> No <u> </u> Depth (inches): <u>3"</u>	
Saturation present? (includes capillary fringe)	Yes <u>X</u> No <u> </u> Depth (inches): <u>Surface</u>	

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

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-18-wet**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Quercus phellos</u>	<u>50</u>	<u>Y</u>	<u>FACW</u>
2 <u>Liquidambar styraciflua</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>
3 <u>Acer rubrum</u>	<u>20</u>	<u>N</u>	<u>FAC</u>
4 <u>Pinus taeda</u>	<u>10</u>	<u>N</u>	<u>FAC</u>
5 _____	_____	_____	_____
6 _____	_____	_____	_____
7 _____	_____	_____	_____
8 _____	_____	_____	_____

105 = Total Cover
 50% of total cover: 52.5 20% of total cover: 21

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Ilex opaca</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2 <u>Juniperus virginiana</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
3 _____	_____	_____	_____
4 _____	_____	_____	_____
5 _____	_____	_____	_____
6 _____	_____	_____	_____
7 _____	_____	_____	_____
8 _____	_____	_____	_____

20 = Total Cover
 50% of total cover: 10 20% of total cover: 4

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Lonicera japonica</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
2 <u>Ligustrum japonicum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3 _____	_____	_____	_____
4 _____	_____	_____	_____
5 _____	_____	_____	_____
6 _____	_____	_____	_____
7 _____	_____	_____	_____
8 _____	_____	_____	_____
9 _____	_____	_____	_____
10 _____	_____	_____	_____
11 _____	_____	_____	_____
12 _____	_____	_____	_____

20 = Total Cover
 50% of total cover: 10 20% of total cover: 4

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Smilax glauca</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
2 _____	_____	_____	_____
3 _____	_____	_____	_____
4 _____	_____	_____	_____
5 _____	_____	_____	_____

20 = Total Cover
 50% of total cover: 10 20% of total cover: 4

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: 7 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 71.43% (A/B)

Prevalence Index worksheet

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>95</u>	x 3 = <u>285</u>
FACU species <u>20</u>	x 4 = <u>80</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>165</u> (A)	<u>465</u> (B)

Prevalence Index = B/A = 2.82

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).
Although some plants are marginally hydrophytic (facultative), the hydrology and soils indicated that the area is a wetland.

SOIL

Sampling Point: 05-WTL-18-wet

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 ¹	Loc2		
0-12	10YR 3 / 1	100					Sandy clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input checked="" type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-18-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 10

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-18-wet Wetland with visible surface water.



05-WTL-18-wet Upland trees near wetland boundary.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Elmont Sampling Date: February 3, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-18-upl
 Investigator(s): D. Mitchell & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Pasture Local relief (concave, convex, none): None Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.716029 Long: -77.49496 Datum: NAD-1983
 Soil Map Unit Name: Aquults, nearly level NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: The data was collected one week after a major snow storm. The soils are saturated on the surface due to snow melt and recent rains. Soils would typically be moderately well drained. Field Sheet: 13-C-WTL-02-upl.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>Surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	---

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

Remarks: **Saturation is present due to recent rains and snow melt. The area drains into a wetland just south of the upland datapoint. Soils would typically be moderately well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-18-upl**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Ligustrum japonicum	10	Y	FAC
2			
3			
4			
5			
6			
7			
8			

10 = Total Cover
 50% of total cover: 5 20% of total cover: 2

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Festuca arundinacea	40	Y	UPL
2 Poa pratensis	40	Y	FACU
3 Trifolium repens	10	N	FACU
4			
5			
6			
7			
8			
9			
10			
11			
12			

90 = Total Cover
 50% of total cover: 45 20% of total cover: 18

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 33.33% (A/B)

Prevalence Index worksheet

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>50</u>	x 4 = <u>200</u>
UPL species <u>40</u>	x 5 = <u>200</u>
Column totals <u>100</u> (A)	<u>430</u> (B)

Prevalence Index = B/A = 4.30

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No X

Remarks: (If observed, list morphological adaptations below).
Plumegrass and pokeweed are present within the upland, further out from the sample point.

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 ¹	Loc2		
0-5	10YR	5 / 1	100					Silty clay	
5-12	10YR	3 / 1	100					Silty clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks: **From 5-12 inches, soils are dry.**

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Hanover County Sampling Date: February 4, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-19-wet
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.709129 Long: -77.496993 Datum: NAD-1983
 Soil Map Unit Name: Aquults, nearly level NWI classification: PEM/PSS

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes ___ No X (If no, explain in Remarks.)
 Are vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? No Are "normal circumstances" present? Yes X No ___
 Are vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (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 <u>X</u> No ___ Hydric Soil Present? Yes <u>X</u> No ___ Wetland Hydrology Present? Yes <u>X</u> No ___	Is the Sampled Area within a Wetland? Yes <u>X</u> No ___
Remarks: Data taken one week after a major snow storm. Wetland is in the floodplain of STR-11. Small depression that receives drainage from adjacent hillslope/yard. Not a high quality wetland. Surface water present likely due mostly to recent rain events. Field Sheet: 13-B-WET-13, wetDP.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No ___ Depth (inches): <u>0-6</u> Water table present? Yes <u>X</u> No ___ Depth (inches): <u>8</u> Saturation present? Yes <u>X</u> No ___ Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No ___
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Surface water present throughout most of wetland. Due to recent rains surface water is likely increased.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-19-wet**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Betula nigra</u>	<u>40</u>	<u>Y</u>	<u>FACW</u>
2	<u>Liquidambar styraciflua</u>	<u>35</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				

75 = Total Cover
 50% of total cover: 37.5 20% of total cover: 15

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Ipomoea spp.</u>	<u>25</u>	<u>Y</u>	
2	<u>Lonicera japonica</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
3	<u>Sorghum halepense</u>	<u>10</u>	<u>N</u>	<u>FACU</u>
4	<u>Rubus spp.</u>	<u>10</u>	<u>N</u>	
5	<u>Juncus effusus</u>	<u>10</u>	<u>N</u>	<u>FACW</u>
6	<u>Carex spp.</u>	<u>10</u>	<u>N</u>	
7				
8				
9				
10				
11				

80 = Total Cover
 50% of total cover: 40 20% of total cover: 16

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 75.00% (A/B)

Prevalence Index worksheet

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>50</u>	x 3 = <u>150</u>
FACU species <u>10</u>	x 4 = <u>40</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>110</u>	(A) <u>290</u> (B)

Prevalence Index = B/A = 2.64

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

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 ¹	Loc2		
0-4	5Y 2.5 / 1	100					silt loam	
4-12	5Y 4 / 1	95	5YR 4 / 6	5			silty clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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"/> Piedmont Floodplain Soils (F19)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 2 cm Mucky Mineral (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)	
<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)		

³Indicators 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:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-19-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 5

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-19-wet Typical view of wetland



05-WTL-19-wet View of wetland boundary with railroad in the back



05-WTL-19-wet View of channels in wetland



05-WTL-19-wet Wetland soil core



05-WTL-19-wet View of upland area



05-WTL-19-wet Upland soil core

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-19-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Betula nigra</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>
2	<u>Quercus stellata</u>	<u>20</u>	<u>Y</u>	<u>UPL</u>
3	<u>Pinus virginiana</u>	<u>10</u>	<u>N</u>	
4				
5				
6				
7				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 7 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 28.57% (A/B)

60 = Total Cover

50% of total cover: 30 20% of total cover: 12

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>30</u>	x 2 = <u>60</u>
FAC species <u>20</u>	x 3 = <u>60</u>
FACU species <u>95</u>	x 4 = <u>380</u>
UPL species <u>40</u>	x 5 = <u>200</u>
Column totals <u>185</u>	(A) <u>700</u> (B)

Prevalence Index = B/A = 3.78

Sapling/Shrub Stratum (Plot Size: 15' radius)

1	<u>Juniperus virginiana</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>
2	<u>Quercus stellata</u>	<u>20</u>	<u>Y</u>	<u>UPL</u>
3	<u>Acer rubrum</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
4	<u>Ilex opaca</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>
5				
6				
7				
8				
9				

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is $\leq 3.0^1$

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

75 = Total Cover

50% of total cover: 37.5 20% of total cover: 15

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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Herb Stratum (Plot Size: 5' radius)

1	<u>Festuca arundinaceus</u>	<u>60</u>	<u>Y</u>	<u>FACU</u>
2	<u>Amaryllis spp.</u>	<u>5</u>	<u>N</u>	
3				
4				
5				
6				
7				
8				
9				
10				
11				

Woody Vine Stratum (Plot Size: 30' radius)

1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Hydrophytic Vegetation Present? Yes No X

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

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Hanover County Sampling Date: February 4, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-20-wet
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.705073 Long: -77.498241 Datum: NAD-1983
 Soil Map Unit Name: Spotsylvania-Bourne fine sandy loams, 7 to 15 percent slopes NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Small depressional wetland. Surface water present. Some buttressed trees. Field Sheet: 14-B-WTL-01, WetDP.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>4</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>8</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Ponded area (depression). Surface water present throughout.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-20-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>
2	<u>Acer rubrum</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>
3	<u>Quercus phellos</u>	<u>10</u>	<u>N</u>	<u>FAC</u>
4				
5				
6				
7				

85 = Total Cover
 50% of total cover: 42.5 20% of total cover: 17

Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				

30 = Total Cover
 50% of total cover: 15 20% of total cover: 6

Herb Stratum (Plot Size: <u>5' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Scirpus georgianus</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>
2	<u>Carex spp.</u>	<u>10</u>	<u>Y</u>	
3				
4				
5				
6				
7				
8				
9				
10				
11				

20 = Total Cover
 50% of total cover: 10 20% of total cover: 4

Woody Vine Stratum (Plot Size: <u>30' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 80.00% (A/B)

Prevalence Index worksheet

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>115</u>	x 3 = <u>345</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>355</u> (B)

Prevalence Index = B/A = 2.84

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-20-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 5

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-20-wet Typical wetland view



05-WTL-20-wet Typical wetland view



05-WTL-20-wet Typical wetland view



05-WTL-20-wet Wetland soil core



05-WTL-20-wet View of upland area



05-WTL-20-wet Upland soil core

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Hanover County Sampling Date: February 4, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-20-upl
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 10%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.704846 Long: -77.498133 Datum: NAD-1983
 Soil Map Unit Name: Spotsylvania-Bourne fine sandy loams, 7 to 15 percent slopes NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> </u>
Remarks: Upland data point on a hillslope. Soils are moderately to well drained. Field Sheet: 14-B-WTL-01, upDP.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Soils are moderately to well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-20-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>
2	<u>Pinus taeda</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
3	<u>Fagus grandifolia</u>	<u>10</u>	<u>N</u>	<u>FACU</u>
4				
5				
6				
7				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across all Strata: 8 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

80 = Total Cover

50% of total cover: 40 20% of total cover: 16

Prevalence Index worksheet

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>95</u>	x 3 = <u>285</u>
FACU species <u>55</u>	x 4 = <u>220</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>150</u>	(A) <u>505</u> (B)

Prevalence Index = B/A = 3.37

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
2	<u>Ilex opaca</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>
3	<u>Quercus alba</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
4	<u>Juniperus virginiana</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
5				
6				
7				
8				
9				

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is $\leq 3.0^1$

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

50 = Total Cover

50% of total cover: 25 20% of total cover: 10

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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2	<u>Allium canadense</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
3				
4				
5				
6				
7				
8				
9				
10				
11				

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Hydrophytic Vegetation Present? Yes No X

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

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Hanover County Sampling Date: February 4, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-21-wet
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.703418 Long: -77.498667 Datum: NAD-1983
 Soil Map Unit Name: Spotsylvania-Bourne fine sandy loams, 7 to 15 percent slopes NWI classification: PFO/PSS

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> X </u> No <u> </u> Hydric Soil Present? Yes <u> X </u> No <u> </u> Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u>
Remarks: Depressional wetland that parallels railroad ballast. Surface water present throughout. Adjacent to mature upland forest. Water higher than normal due to recent rains. Field Sheet: 14-B-WTL-02, WetDP.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 6 </u> Water table present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 1 </u> Saturation present? Yes <u> X </u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> X </u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Surface water present throughout. Some buttressed trees. Wetland receives drainage from adjacent hill slopes/upland area.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-21-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	Liquidambar styraciflua	50	Y	FAC
2	Acer rubrum	15	Y	FAC
3	Quercus phellos	10	N	FAC
4				
5				
6				
7				

75 = Total Cover
 50% of total cover: **37.5** 20% of total cover: **15**

Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	Pinus taeda	5	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				

5 = Total Cover
 50% of total cover: **2.5** 20% of total cover: **1**

Herb Stratum (Plot Size: <u>5' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	Campsis radicans	10	Y	FAC
2	Rubus spp.	10	Y	
3				
4				
5				
6				
7				
8				
9				
10				
11				

20 = Total Cover
 50% of total cover: **10** 20% of total cover: **4**

Woody Vine Stratum (Plot Size: <u>30' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 80.00% (A/B)

Prevalence Index worksheet

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>0</u>	x 4 =	<u>0</u>
UPL species <u>0</u>	x 5 =	<u>0</u>
Column totals <u>90</u>	(A)	<u>270</u> (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-21-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	0	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 3

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-21-wet Typical wetland view



05-WTL-21-wet Typical wetland view



05-WTL-21-wet Typical wetland view



05-WTL-21-wet Wetland soil core



05-WTL-21-wet View of upland area



05-WTL-21-wet Upland soil core

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-21-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Quercus alba</u>	<u>70</u>	<u>Y</u>	<u>FACU</u>
2	<u>Quercus rubra</u>	<u>15</u>	<u>N</u>	<u>FACU</u>
3	<u>Pinus taeda</u>	<u>10</u>	<u>N</u>	<u>FAC</u>
4				
5				
6				
7				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 25.00% (A/B)

95 = Total Cover

50% of total cover: 47.5 20% of total cover: 19

Prevalence Index worksheet

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>90</u>	x 4 = <u>360</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>120</u>	(A) <u>450</u> (B)

Prevalence Index = B/A = 3.75

Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is $\leq 3.0^1$

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

20 = Total Cover

50% of total cover: 10 20% of total cover: 4

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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Herb Stratum (Plot Size: <u>5' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Ilex opaca</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>
2	<u>senesced grass</u>	<u>5</u>	<u>Y</u>	
3				
4				
5				
6				
7				
8				
9				
10				
11				

Woody Vine Stratum (Plot Size: <u>30' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Hydrophytic Vegetation Present? Yes No X

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

Senesced grass was believed to be in the Paspalum family.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Hanover County Sampling Date: February 4, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-22-wet
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.701648 Long: -77.499366 Datum: NAD-1983
 Soil Map Unit Name: Spotsylvania-Bourne fine sandy loams, 7 to 15 percent slopes NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> X </u> No <u> </u> Hydric Soil Present? Yes <u> X </u> No <u> </u> Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u>
Remarks: Wetland is in the floodplain of Chickahominy River. Surface water present throughout wetland. Good quality wetland. Field Sheet: 14-B-WTL-03, WetDP.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 2 </u> Water table present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 10 </u> Saturation present? Yes <u> X </u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> X </u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Floodplain of Chickahominy River. Surface water present throughout.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-22-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Pinus taeda</u>	<u>60</u>	<u>Y</u>	<u>FAC</u>
2	<u>Quercus phellos</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
3	<u>Acer rubrum</u>	<u>20</u>	<u>N</u>	<u>FAC</u>
4	<u>Betula nigra</u>	<u>10</u>		<u>FACW</u>
5				
6				
7				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 80.00% (A/B)

120 = Total Cover

50% of total cover: 60 20% of total cover: 24

Prevalence Index worksheet

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>165</u>	x 3 = <u>495</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>535</u> (B)

Prevalence Index = B/A = 2.89

Sapling/Shrub Stratum (Plot Size: 15' radius)

1	<u>Acer rubrum</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>
2	<u>Carpinus caroliniana</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
3	<u>Betula nigra</u>	<u>10</u>	<u>N</u>	<u>FACW</u>
4				
5				
6				
7				
8				
9				

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is $\leq 3.0^1$

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

65 = Total Cover

50% of total cover: 32.5 20% of total cover: 13

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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Herb Stratum (Plot Size: 5' radius)

1	<u>Lycopodiopsida ssp.</u>	<u>5</u>	<u>Y</u>	
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

Woody Vine Stratum (Plot Size: 30' radius)

1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Hydrophytic Vegetation Present? Yes No

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

Herb layer nearly absent.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-22-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	3	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	3	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	3	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	3	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	3	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	3	

Total Score 18

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-22-wet Typical view of wetland



05-WTL-22-wet Typical view of wetland and Chickahominy River bridge



05-WTL-22-wet Typical view of wetland



05-WTL-22-wet Wetland soil core



05-WTL-22-wet View of upland area



05-WTL-22-wet Upland soil core

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Hanover County Sampling Date: February 4, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-22-upl
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 35%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.702137 Long: -77.499173 Datum: NAD-1983
 Soil Map Unit Name: Spotsylvania-Bourne fine sandy loams, 7 to 15 percent slopes NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u> X </u> Hydric Soil Present? Yes <u> </u> No <u> X </u> Wetland Hydrology Present? Yes <u> </u> No <u> X </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> X </u>
Remarks: Data point taken on hillslope above floodplain. Soils are well drained. Field Sheet: 14-B-WTL-03, upDP.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u> X </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-22-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Quercus alba</u>	<u>60</u>	<u>Y</u>	<u>FACU</u>
2	<u>Quercus rubra</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>
3	<u>Juniperus virginiana</u>	<u>10</u>	<u>N</u>	<u>FACU</u>
4				
5				
6				
7				

90 = Total Cover

50% of total cover: 45 20% of total cover: 18

Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				

15 = Total Cover

50% of total cover: 7.5 20% of total cover: 3

Herb Stratum (Plot Size: <u>5' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Ilex opaca</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

5 = Total Cover

50% of total cover: 2.5 20% of total cover: 1

Woody Vine Stratum (Plot Size: <u>30' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 25.00% (A/B)

Prevalence Index worksheet

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>15</u>	x 3 = <u>45</u>
FACU species <u>95</u>	x 4 = <u>380</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>110</u>	(A) <u>425</u> (B)

Prevalence Index = B/A = 3.86

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Henrico County Sampling Date: February 4, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-23-wet
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.695603 Long: -77.501055 Datum: NAD-1983
 Soil Map Unit Name: Appling clay loam, 2 to 15 percent slopes, severely eroded NWI classification: PFO/PSS
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Depressional wetland with a small ephemeral channel that is braided through the wetland. Soils are saturated at the surface with a few small pools of water. Field Sheet: 14-B-WTL-04, WetDP.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>8</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	---

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

Remarks: **Small ephemeral channel branched throughout wetland. Soils are saturated to the surface.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-23-wet**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>
2	<u>Quercus phellos</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>
3	<u>Acer rubrum</u>	<u>10</u>	<u>N</u>	<u>FAC</u>
4				
5				
6				
7				

60 = Total Cover

50% of total cover: 30

20% of total cover: 12

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>
2	<u>Alnus spp.</u>	<u>25</u>	<u>Y</u>	
3				
4				
5				
6				
7				
8				
9				

50 = Total Cover

50% of total cover: 25

20% of total cover: 10

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Glyceria striata</u>	<u>30</u>	<u>Y</u>	<u>OBL</u>
2	<u>Carex spp.</u>	<u>20</u>	<u>Y</u>	
3				
4				
5				
6				
7				
8				
9				
10				
11				

50 = Total Cover

50% of total cover: 25

20% of total cover: 10

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: 0

20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Prevalence Index worksheet

	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>85</u>	x 3 =	<u>255</u>
FACU species	<u>0</u>	x 4 =	<u>0</u>
UPL species	<u>0</u>	x 5 =	<u>0</u>
Column totals	<u>115</u>	(A)	<u>285</u> (B)

Prevalence Index = B/A = 2.48

Hydrophytic Vegetation Indicators:

- 1 -Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is ≤3.0¹
- 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Herb layer nearly absent.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-23-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 9

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-23-wet Typical view of wetland



05-WTL-23-wet Typical view of wetland



05-WTL-23-wet Typical view of wetland



05-WTL-23-wet Typical view of wetland



05-WTL-23-wet Typical view of wetland



05-WTL-23-wet Wetland soil core

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-23-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2	<u>Liquidambar styraciflua</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
3	<u>Pinus taeda</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
4				
5				
6				
7				

90 = Total Cover
 50% of total cover: 45 20% of total cover: 18

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2	<u>Juniperus virginiana</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>
3	<u>Ilex opaca</u>	<u>5</u>	<u>N</u>	<u>FACU</u>
4				
5				
6				
7				
8				
9				

50 = Total Cover
 50% of total cover: 25 20% of total cover: 10

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

15 = Total Cover
 50% of total cover: 7.5 20% of total cover: 3

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

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

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

Percent of Dominant Species that are OBL, FACW, or FAC: 83.33% (A/B)

Prevalence Index worksheet

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>135</u>	x 3 = <u>405</u>
FACU species <u>20</u>	x 4 = <u>80</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>155</u>	(A) <u>485</u> (B)

Prevalence Index = B/A = 3.13

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

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 ¹	Loc2		
0-2	2.5Y 2.5 / 1	100					sandy loam	organics
2-12	2.5Y 4 / 1	100					sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 Mucky Mineral (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)		

³Indicators 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 **X** _____

Remarks:

Soils are well drained.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Henrico County Sampling Date: February 4, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-24-wet
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.686206 Long: -77.502231 Datum: NAD-1983
 Soil Map Unit Name: Colfax fine sandy loam, indurated substratum, 0 to 6 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Linear wetland area with standing water. Wetland flows to railside ditch under culvert. The culvert is on a logging road. Field Sheet: 14-A-WTL-3 wet dp 1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>8-16</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-24-wet**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>80</u>	<u>Y</u>	<u>FAC</u>
2	<u>Liquidambar styraciflua</u>	<u>15</u>	<u>N</u>	<u>FAC</u>
3				
4				
5				
6				
7				

95 = Total Cover
 50% of total cover: 47.5 20% of total cover: 19

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2	<u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				
8				
9				

20 = Total Cover
 50% of total cover: 10 20% of total cover: 4

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>
2	<u>Smilax spp.</u>	<u>5</u>	<u>Y</u>	
3				
4				
5				
6				
7				
8				
9				
10				
11				

10 = Total Cover
 50% of total cover: 5 20% of total cover: 2

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 80.00% (A/B)

Prevalence Index worksheet

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>120</u>	x 3 = <u>360</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>360</u> (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-24-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 9

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-24-wet

Photo description.

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-24-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Pinus strobus</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>
2	<u>Liquidambar styraciflua</u>	<u>10</u>	<u>N</u>	<u>FAC</u>
3	<u>Juniperus virginiana</u>	<u>10</u>	<u>N</u>	<u>FACU</u>
4				
5				
6				
7				

60 = Total Cover
 50% of total cover: 30 20% of total cover: 12

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
2	<u>Juniperus virginiana</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
3	<u>Ligustrum spp.</u>	<u>5</u>	<u>N</u>	
4				
5				
6				
7				
8				
9				

30 = Total Cover
 50% of total cover: 15 20% of total cover: 6

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera spp.</u>	<u>1</u>	<u>N</u>	
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

1 = Total Cover
 50% of total cover: 0.5 20% of total cover: 0.2

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 33.33% (A/B)

Prevalence Index worksheet

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>60</u>	x 4 = <u>240</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>85</u>	(A) <u>315</u> (B)

Prevalence Index = B/A = 3.71

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Henrico County Sampling Date: February 4, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-25-wet
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.682521 Long: -77.502994 Datum: NAD-1983
 Soil Map Unit Name: Colfax fine sandy loam, indurated substratum, 0 to 6 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: PFO wetland adjacent to rail. Field Sheet: 14-A-WTL-2 wetdp1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>6-12</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-25-wet**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>
2	<u>Acer rubrum</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				

80 = Total Cover
 50% of total cover: 40 20% of total cover: 16

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
2	<u>Liquidambar styraciflua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				
8				
9				

40 = Total Cover
 50% of total cover: 20 20% of total cover: 8

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Campsis radicans</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				

5 = Total Cover
 50% of total cover: 2.5 20% of total cover: 1

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)

Prevalence Index worksheet

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>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>125</u>	(A) <u>375</u> (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Red maple and sweetgum buttressing in inundated areas.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-25-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	3	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 7

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-25-wet Typical view of wetland



05-WTL-25-wet Typical view of wetland



05-WTL-25-wet Typical view of wetland



05-WTL-25-wet 30 inch concrete Culvert 14

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Henrico County Sampling Date: February 4, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-25-upl
 Investigator(s): L.Eggering, D. Mitchell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 5%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.68252 Long: -77.502994 Datum: NAD-1983
 Soil Map Unit Name: Colfax fine sandy loam, indurated substratum, 0 to 6 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Hydrology for wetland not present. Area is higher than wetland. Most plants are FAC. Field Sheet: 14-A-WTL-2 up dp 1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
--	--

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

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-25-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Pinus taeda</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
2	<u>Liquidambar styraciflua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
3	<u>Ilex opaca</u>	<u>10</u>	<u>N</u>	<u>FACU</u>
4	<u>Juniperus virginiana</u>	<u>5</u>		<u>FACU</u>
5				
6				
7				

55 = Total Cover
 50% of total cover: 27.5 20% of total cover: 11

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Ilex opaca</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
2				
3				
4				
5				
6				
7				
8				
9				

10 = Total Cover
 50% of total cover: 5 20% of total cover: 2

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Campsis radicans</u>	<u>20</u>		<u>FAC</u>
2				
3				
4				
5				

20 = Total Cover
 50% of total cover: 10 20% of total cover: 4

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Prevalence Index worksheet

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>60</u>	x 3 = <u>180</u>
FACU species <u>25</u>	x 4 = <u>100</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>85</u>	(A) <u>280</u> (B)

Prevalence Index = B/A = 3.29

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Lots of trumpet creeper.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Henrico County Sampling Date: February 4, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-26-wet
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.679416 Long: -77.503144 Datum: NAD-1983
 Soil Map Unit Name: Helena fine sandy loam, 2 to 6 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: **Low area just north of I-295. Drains via a smaller ditch & flows into a culvert under the rail.**
Field Sheet: 14-A-WTL-1 wetdp1.

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>4-12</u>	
Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u>	
Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (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: **05-WTL-26-wet**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>80</u>	<u>Y</u>	<u>FAC</u>
2	<u>Pinus styraciflua</u>	<u>10</u>	<u>N</u>	
3				
4				
5				
6				
7				

90 = Total Cover
 50% of total cover: 45 20% of total cover: 18

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				

10 = Total Cover
 50% of total cover: 5 20% of total cover: 2

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index worksheet

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>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>90</u>	(A) <u>270</u> (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Large mature sweetgums with buttressing growing out of unundated area.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-26-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 7

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-26-wet Typical view of wetland



05-WTL-26-wet Buried culvert serving wetland



05-WTL-26-wet Typical view of wetland

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Henrico County Sampling Date: February 4, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-26-upl
 Investigator(s): J. Budnik, K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): ridge Local relief (concave, convex, none): convex Slope (%): 4%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.679416 Long: -77.503144 Datum: NAD-1983
 Soil Map Unit Name: Helena fine sandy loam, 2 to 6 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Upland area, south of wetland. Field Sheet: 14-A-WTL-1 updp1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
--	--

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

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-26-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Pinus taeda</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>
2	<u>Liquidambar styraciflua</u>	<u>10</u>	<u>N</u>	<u>FAC</u>
3	<u>Ulmus rubra</u>	<u>10</u>	<u>N</u>	<u>FAC</u>
4	<u>Acer rubrum</u>	<u>10</u>		<u>FAC</u>
5				
6				
7				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

80 = Total Cover

50% of total cover: 40 20% of total cover: 16

Prevalence Index worksheet

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>120</u>	x 3 = <u>360</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>360</u> (B)

Prevalence Index = B/A = 3.00

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
2	<u>Liquidambar styraciflua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				
8				
9				

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

40 = Total Cover

50% of total cover: 20 20% of total cover: 8

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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

Hydrophytic Vegetation Present? Yes No

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

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

Mixed forest

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 7, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 05-WTL-B-01-wet
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Draw Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.807212 Long: -77.468119 Datum: NAD-1983
 Soil Map Unit Name: Orangeburg-Facevill fine sandy loams, 2 to 7 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This draw fans out into a small PFO wetland. It has the requisite soils, hydrology, and plants. It transitions into an ephemeral channel then into a wetland again outside the study area. Field Sheet 22-WTL-03-wet	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0-2"</u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>Surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Area receives surface water runoff and flow from a small channel to the west, outside of the study area.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-01-wet**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Acer rubrum	90	Y	FAC
2				
3				
4				
5				
6				
7				

90 = Total Cover
 50% of total cover: **45** 20% of total cover: **18**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Clethra alnifolia	80	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				

80 = Total Cover
 50% of total cover: **40** 20% of total cover: **16**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Onoclea sensibilis	2	N	OBL
2	Leersia virginica	2	N	FACW
3				
4				
5				
6				
7				
8				
9				
10				
11				

4 = Total Cover
 50% of total cover: **2** 20% of total cover: **0.8**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Smilax glauca	5	Y	FACU
2				
3				
4				
5				

5 = Total Cover
 50% of total cover: **2.5** 20% of total cover: **1**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>2</u>	x 1 = <u>2</u>
FACW species <u>2</u>	x 2 = <u>4</u>
FAC species <u>170</u>	x 3 = <u>510</u>
FACU species <u>5</u>	x 4 = <u>20</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>179</u>	(A) <u>536</u> (B)

Prevalence Index = B/A = 2.99

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Very dense stand of pepperbush with a red maple overstory. Some willow oak present outside the wetland plot.

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 ¹	Loc2		
0-2	10YR 3 / 1	100					Loam	A lot of organic matter present.
2-12	10YR 5 / 1	100					Sandy clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 checked="" 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 checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> 2 cm Mucky Mineral (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)		

³Indicators 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:

Mild sulfide odor.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-B-01-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 7

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-B-01-wet Seep water in wetland.

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-01-upl**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Quercus alba	40	Y	FACU
2	Liquidambar styraciflua	10	Y	FAC
3				
4				
5				
6				
7				

50 = Total Cover
 50% of total cover: **25** 20% of total cover: **10**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Quercus rubra	15	Y	FACU
2	Acer rubrum	10	Y	FAC
3	Clethra alnifolia	5	N	FAC
4				
5				
6				
7				
8				
9				

30 = Total Cover
 50% of total cover: **15** 20% of total cover: **6**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Vitis spp.	2	N	
2				
3				
4				
5				

2 = Total Cover
 50% of total cover: **1** 20% of total cover: **0.4**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **2** (A)

Total Number of Dominant Species Across all Strata: **4** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **50.00%** (A/B)

Prevalence Index worksheet

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 = **3.69**

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No **X**

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

Understory nearly absent with closed canopy.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 21, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-B-02-wet
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.80013 Long: -77.472467 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents, nearly level NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Wetland on west side of Route 1 near culvert for Falling Creek. Field Sheet 22-A-WTL-19-wet	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>Up to 3"</u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>Surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	---

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

Remarks: **Ephemeral channel fed by culvert at intersection of Route 1 with Cross Corner Road, channel flattens out in low lying area on west side of Route 1.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-02-wet**

Tree Stratum (Plot Size: 30' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Liquidambar styraciflua	7	Y	FAC
2	Acer rubrum	5	Y	FAC
3				
4				
5				
6				
7				
		12	= Total Cover	
50% of total cover: 6		20% of total cover: 2.4		

Sapling/Shrub Stratum (Plot Size: 15' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Ulmus americana	10	Y	FACW
2				
3				
4				
5				
6				
7				
8				
9				
		10	= Total Cover	
50% of total cover: 5		20% of total cover: 2		

Herb Stratum (Plot Size: 5' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Saururus cernuus	90	Y	OBL
2	Glyceria striata	10	N	OBL
3				
4				
5				
6				
7				
8				
9				
10				
11				
		100	= Total Cover	
50% of total cover: 50		20% of total cover: 20		

Woody Vine Stratum (Plot Size: _____)		Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
		0	= Total Cover	
50% of total cover: 0		20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>100</u>	x 1 = <u>100</u>
FACW species <u>10</u>	x 2 = <u>20</u>
FAC species <u>12</u>	x 3 = <u>36</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>122</u>	(A) <u>156</u> (B)

Prevalence Index = B/A = 1.28

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Most trees are rooted around the wetland margins.

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 ¹	Loc2		
0-4	10YR 4 / 1	100					Sandy loam	Contains silt
4-12	10YR 5 / 1	100					Sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> 2 cm Mucky Mineral (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)		

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

Restrictive Layer (if observed):
 Type: N/A
 Depth (inches): N/A Hydric soil present? Yes X No _____

Remarks:
Soils very loose and super saturated.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-B-02-wet

Project/Site: DC2RVA-Segment 22

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 6

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-B-02-wet PEM vegetation near Falling Creek.



05-WTL-B-02-wet PEM vegetation near Falling Creek.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 21, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 05-WTL-B-02-upl
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 15%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.800148 Long: -77.472424 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents, nearly level NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	

Remarks: **High terrace above wetland, just west of Route 1 and inside barrier, north of culvert for Falling Creek.**
Field Sheet 22-A-WTL-19-upl

HYDROLOGY

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

Field Observations:		Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Surface water present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Water table present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe)	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Area is well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-02-upl**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	_____	_____	_____	_____
2	_____	_____	_____	_____
3	_____	_____	_____	_____
4	_____	_____	_____	_____
5	_____	_____	_____	_____
6	_____	_____	_____	_____
7	_____	_____	_____	_____

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	_____	_____	_____	_____
2	_____	_____	_____	_____
3	_____	_____	_____	_____
4	_____	_____	_____	_____
5	_____	_____	_____	_____
6	_____	_____	_____	_____
7	_____	_____	_____	_____
8	_____	_____	_____	_____
9	_____	_____	_____	_____

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	_____	_____	_____	_____
2	_____	_____	_____	_____
3	_____	_____	_____	_____
4	_____	_____	_____	_____
5	_____	_____	_____	_____
6	_____	_____	_____	_____
7	_____	_____	_____	_____
8	_____	_____	_____	_____
9	_____	_____	_____	_____
10	_____	_____	_____	_____
11	_____	_____	_____	_____

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	_____	_____	_____	_____
2	_____	_____	_____	_____
3	_____	_____	_____	_____
4	_____	_____	_____	_____
5	_____	_____	_____	_____

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across all Strata: **0** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	0 x 1 = 0
FACW species	0 x 2 = 0
FAC species	0 x 3 = 0
FACU species	0 x 4 = 0
UPL species	0 x 5 = 0
Column totals	0 (A) 0 (B)

Prevalence Index = B/A = _____

- Hydrophytic Vegetation Indicators:**
- ___ 1 -Rapid Test for Hydrophytic Vegetation
 - ___ 2 - Dominance Test is >50%
 - ___ 3 - Prevalence Index is ≤3.0¹
 - ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - ___ Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No **X**

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

Vegetation absent. Trees outside the data point include: American elm, Sweetgum, and Red Maple.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 21, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-B-03-wet
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.799685 Long: -77.472016 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents, nearly level NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Ditch paralleling the east side of Route 1, fed by a culvert from north side of Elletts Crossing Road. Old Road bed on east side; Highway 1 on west side. Drains through a buried culvert. Field Sheet 22-a-WTL-18-wet	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>Up to 3"</u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>Surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Wetland with active stream channel (flowing water). Soils surrounding stream channel are very saturated, mucky/squishy, with lots of earthworms (indicated by soils).**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-03-wet**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Platanus occidentalis	90	Y	FACW
2				
3				
4				
5				
6				
7				

90 = Total Cover
 50% of total cover: **45** 20% of total cover: **18**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Saururus cernuus	80	Y	OBL
2	Juncus effusus	20	N	FACW
3	Glyceria striata	20	N	OBL
4				
5				
6				
7				
8				
9				
10				
11				

120 = Total Cover
 50% of total cover: **60** 20% of total cover: **24**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)
 Total Number of Dominant Species Across all Strata: _____ (B)
 Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column totals _____	(A) _____ (B) _____

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)
Sycamore rooted in upland.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-B-03-wet

Project/Site: DC2RVA-Segment 22

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 7

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-B-03-wet PEM vegetation.



05-WTL-B-03-wet Saururus cernuus in wetland.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 21, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-B-03-upl
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 20%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.799726 Long: -77.47198 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents, nearly level NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	

Remarks: **This is the upland point for the road ditch Wetland 18. It is on a raised fill from an old road bed.**
Field Sheet 22-A-WTL-18-upl

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **On high terrace above wetland, east of Route 1.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-03-upl**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Liquidambar styraciflua	70	Y	FAC
2	Platanus occidentalis	30	Y	FACW
3				
4				
5				
6				
7				
		100 = Total Cover		
50% of total cover: 50		20% of total cover: 20		

Dominance Test worksheet:

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

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

Percent of Dominant Species that are OBL, FACW, or FAC: 83.33% (A/B)

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Carpinus caroliniana	10	Y	FAC
2	Celtis occidentalis	10	Y	FACU
3				
4				
5				
6				
7				
8				
9				
		20 = Total Cover		
50% of total cover: 10		20% of total cover: 4		

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>30</u>	x 2 = <u>60</u>
FAC species <u>90</u>	x 3 = <u>270</u>
FACU species <u>10</u>	x 4 = <u>40</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>130</u>	(A) <u>370</u> (B)

Prevalence Index = B/A = 2.85

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Toxicodendron radicans	5	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
		5 = Total Cover		
50% of total cover: 2.5		20% of total cover: 1		

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Toxicodendron radicans	5	Y	FAC
2				
3				
4				
5				
		5 = Total Cover		
50% of total cover: 2.5		20% of total cover: 1		

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 (1m) tall.

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

Woody vines - 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.)

Sycamore rooted in upland.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 21, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 05-WTL-B-04-wet
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.799423 Long: -77.47244 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents, nearly level NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> X </u> No <u> </u> Hydric Soil Present? Yes <u> X </u> No <u> </u> Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u>
Remarks: Wetland south of culvert for Falling Creek, on west side of Route 1. Fed by ephemeral stream from the south, toward Falling Creek.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> X </u> No <u> </u> Depth (inches): <u>Up to 3"</u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> X </u> No <u> </u> Depth (inches): <u>Surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> X </u> No <u> </u>
--	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Data point at saturated soils section. Inundation occurs at ephemeral stream feeding wetland.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-04-wet**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0**

20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Cephalanthus occidentalis	10	Y	OBL
2				
3				
4				
5				
6				
7				
8				
9				

10 = Total Cover

50% of total cover: **5**

20% of total cover: **2**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Juncus effusus	5	Y	FACW
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

5 = Total Cover

50% of total cover: **2.5**

20% of total cover: **1**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				

0 = Total Cover

50% of total cover: **0**

20% of total cover: **0**

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: _____ (B)

Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	x 1 = _____
FACW species	x 2 = _____
FAC species	x 3 = _____
FACU species	x 4 = _____
UPL species	x 5 = _____
Column totals	(A) _____ (B) _____

Prevalence Index = B/A = _____

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is $\leq 3.0^1$
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Few scattered cattail.

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 ¹		
0-4	10YR	4 / 1	100					Sandy loam Contains silt
4-12	10YR	5 / 1	100					Sandy loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histisol (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 Mucky Mineral (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)	

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

Restrictive Layer (if observed):
 Type: N/A
 Depth (inches): N/A

Hydric soil present? Yes X No _____

Remarks:
Soils very loose and super saturated.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-B-04-wet

Project/Site: DC2RVA-Segment 22

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 6

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-B-04-wet PEM vegetation near Falling Creek.



05-WTL-B-04-wet PEM vegetation near Falling Creek.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 21, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 05-WTL-B-04-upl
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 25%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.79944 Long: -77.472367 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents, nearly level NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u> X </u> Hydric Soil Present? Yes <u> </u> No <u> X </u> Wetland Hydrology Present? Yes <u> </u> No <u> X </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> X </u>
Remarks: This well drained upland data point was on the slope near Hwy 1. Field Sheet 22-A-WTL-20-upl	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u> X </u>
---	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Slope beside Route 1, just inside of barrier.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-04-upl**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	_____	_____	_____	_____
2	_____	_____	_____	_____
3	_____	_____	_____	_____
4	_____	_____	_____	_____
5	_____	_____	_____	_____
6	_____	_____	_____	_____
7	_____	_____	_____	_____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Prevalence Index worksheet

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> 5 </u>	x 4 = <u> 20 </u>
UPL species <u> 0 </u>	x 5 = <u> 0 </u>
Column totals <u> 15 </u>	(A) <u> 50 </u> (B)

Prevalence Index = B/A = 3.33

Sapling/Shrub Stratum (Plot Size: **15' diameter**)

1	_____	_____	_____	_____
2	_____	_____	_____	_____
3	_____	_____	_____	_____
4	_____	_____	_____	_____
5	_____	_____	_____	_____
6	_____	_____	_____	_____
7	_____	_____	_____	_____
8	_____	_____	_____	_____
9	_____	_____	_____	_____

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is $\leq 3.0^1$

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Herb Stratum (Plot Size: **5' diameter**)

1	Lonicera japonica	10	Y	FAC
2	Verbascum thapsus	5	Y	FACU
3	_____	_____	_____	_____
4	_____	_____	_____	_____
5	_____	_____	_____	_____
6	_____	_____	_____	_____
7	_____	_____	_____	_____
8	_____	_____	_____	_____
9	_____	_____	_____	_____
10	_____	_____	_____	_____
11	_____	_____	_____	_____

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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Woody Vine Stratum (Plot Size: _____)

1	_____	_____	_____	_____
2	_____	_____	_____	_____
3	_____	_____	_____	_____
4	_____	_____	_____	_____
5	_____	_____	_____	_____

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Hydrophytic Vegetation Present? Yes No X

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

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 9, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-B-05-wet
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.797598 Long: -77.476783 Datum: NAD-1983
 Soil Map Unit Name: Pinkston-Mayodan sandy loams, 15 to 25 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u> No <u> </u>	

Remarks: **This is a bottomland hardwood wetland in the Falling Creek floodplain. It is poorly drained and is dominated by wetland plants. Field Sheet 22-WTL-10-wet**

HYDROLOGY

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

Field Observations:				Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface water present?	Yes <u>X</u> No <u> </u>	Depth (inches): <u>Up to 2"</u>		
Water table present?	Yes <u> </u> No <u>X</u>	Depth (inches): <u> </u>		
Saturation present? (includes capillary fringe)	Yes <u>X</u> No <u> </u>	Depth (inches): <u>Surface</u>		

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

Remarks: **Boggy, saturated soils surrounded by large willow oak at wetland 10 data point. Slight sulfide odor observed.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-05-wet**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Quercus phellos	50	N	FAC
2	Acer rubrum	40	Y	FAC
3				
4				
5				
6				
7				

90 = Total Cover
 50% of total cover: **45** 20% of total cover: **18**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Fraxinus pennsylvanica	30	Y	FACW
2	Ilex decidua	10	Y	FACW
3				
4				
5				
6				
7				
8				
9				

40 = Total Cover
 50% of total cover: **20** 20% of total cover: **8**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Pilea pumila	10	Y	FACW
2	Leersia virginica	10	Y	FACW
3	Dichanthelium dichotomum	5	N	FAC
4	Smilax rotundifolia	2	N	FAC
5				
6				
7				
8				
9				
10				
11				

27 = Total Cover
 50% of total cover: **13.5** 20% of total cover: **5.4**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Toxicodendron radicans	10	Y	FAC
2				
3				
4				
5				

10 = Total Cover
 50% of total cover: **5** 20% of total cover: **2**

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)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>60</u>	x 2 = <u>120</u>
FAC species <u>107</u>	x 3 = <u>321</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>167</u>	(A) <u>441</u> (B)

Prevalence Index = B/A = 2.64

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)
The holly was primarily on raised areas of the undulating wetland floor.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-B-05-wet

Project/Site: DC2RVA-Segment 22

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	3	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 10

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-B-05-wet PFO vegetation.



05-WTL-B-05-wet PFO vegetation.



05-WTL-B-05-wet PFO vegetation.



05-WTL-B-05-wet PFO vegetation.



05-WTL-B-05-wet PFO vegetation.



05-WTL-B-05-wet PFO vegetation.

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-05-upl**

Tree Stratum (Plot Size: 30' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Carya ovata	70	Y	FACU
2	Liriodendron tulipifera	40	N	FAC
3	Fraxinus pennsylvanica	5	N	FACW
4				
5				
6				
7				
		115	= Total Cover	
50% of total cover: 57.5		20% of total cover: 23		

Sapling/Shrub Stratum (Plot Size: 15' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Ilex decidua	5	Y	FACW
2				
3				
4				
5				
6				
7				
8				
9				
		5	= Total Cover	
50% of total cover: 2.5		20% of total cover: 1		

Herb Stratum (Plot Size: 5' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
		0	= Total Cover	
50% of total cover: 0		20% of total cover: 0		

Woody Vine Stratum (Plot Size: _____)		Absolute % Cover	Dominant Species?	Indicator Status
1	Smilax rotundifolia	10	Y	FAC
2				
3				
4				
5				
		10	= Total Cover	
50% of total cover: 5		20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Prevalence Index worksheet

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>50</u>	x 3 = <u>150</u>
FACU species <u>70</u>	x 4 = <u>280</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>130</u>	(A) <u>450</u> (B)

Prevalence Index = B/A = 3.46

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

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 ¹	Loc2		
0-4	10YR 4 / 4	100					Loam	
4-12	10YR 5 / 4	100					Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 Mucky Mineral (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)		

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

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric soil present? Yes No

Remarks:

Soils were well-drained and not reduced when compared to the wetland soils.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 9, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-B-06-wet
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.794715 Long: -77.481913 Datum: NAD-1983
 Soil Map Unit Name: Worsham fine sandy loam NWI classification: PFO/PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> X </u> No <u> </u> Hydric Soil Present? Yes <u> X </u> No <u> </u> Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	<p align="center">Is the Sampled Area within a Wetland?</p> Yes <u> X </u> No <u> </u>
Remarks: This is a large boggy wetland that had a PFO and PEM component. The PEM portion is in a wet pasture. The entire area is grazed. Field Sheet 22-WTL-09-wet	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> X </u> No <u> </u> Depth (inches): <u>Up to 2"</u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> X </u> No <u> </u> Depth (inches): <u>Surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> X </u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Boggy, waterlogged conditions; standing water in/adjacent to where the wetland data point was collected. Slight sulfide odor observed.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-06-wet**

Tree Stratum (Plot Size: 30' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Acer rubrum	40	Y	FAC
2	Quercus alba	20	N	FAC
3	Carya glabra	10	N	FACU
4	Juniperus virginiana	5	N	FACU
5				
6				
7				
		75 = Total Cover		
50% of total cover: 37.5		20% of total cover: 15		

Sapling/Shrub Stratum (Plot Size: 15' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Fraxinus pennsylvanica	5	Y	FACW
2				
3				
4				
5				
6				
7				
8				
9				
		5 = Total Cover		
50% of total cover: 2.5		20% of total cover: 1		

Herb Stratum (Plot Size: 5' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Echinochloa muricata	10	Y	FACW
2	Microstegium vimineum	10	Y	FAC
3	Cinna arundinacea	10	Y	FACW
4	Carex frankii	2	N	OBL
5	Dichanthelium scoparium	5	Y	FACW
6	Rumex spp.	1	N	
7				
8				
9				
10				
11				
		38 = Total Cover		
50% of total cover: 19		20% of total cover: 7.6		

Woody Vine Stratum (Plot Size: _____)		Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
		0 = Total Cover		
50% of total cover: 0		20% of total cover: 0		

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)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>2</u>	x 1 = <u>2</u>
FACW species <u>30</u>	x 2 = <u>60</u>
FAC species <u>70</u>	x 3 = <u>210</u>
FACU species <u>15</u>	x 4 = <u>60</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>117</u>	(A) <u>332</u> (B)

Prevalence Index = B/A = 2.84

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Raised areas within the wetland have upland trees, such as white oak, hickory, and eastern red cedar.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-B-06-wet

Project/Site: DC2RVA-Segment 22

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	3	

Total Score 10

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-B-06-wet PEM vegetation.



05-WTL-B-06-wet PEM vegetation.



05-WTL-B-06-wet PFO vegetation.

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-06-upl**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Quercus alba	30	Y	FACU
2	Juniperus virginiana	30	N	FACU
3	Carya glabra	20	Y	FACU
4				
5				
6				
7				

80 = Total Cover
 50% of total cover: **40** 20% of total cover: **16**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Juniperus virginiana	10	Y	FACU
2				
3				
4				
5				
6				
7				
8				
9				

10 = Total Cover
 50% of total cover: **5** 20% of total cover: **2**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Carex albicans	10	Y	UPL
2	Schedonorus arundinaceus	10	Y	FACU
3				
4				
5				
6				
7				
8				
9				
10				
11				

20 = Total Cover
 50% of total cover: **10** 20% of total cover: **4**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: **0.00%** (A/B)

Prevalence Index worksheet

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> 100 </u>	x 4 = <u> 400 </u>
UPL species <u> 10 </u>	x 5 = <u> 50 </u>
Column totals <u> 110 </u>	(A) <u> 450 </u> (B)

Prevalence Index = B/A = **4.09**

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No **X**

Remarks: (Include photo numbers here or on a separate sheet.)
The sample point is in an upland forest edge near the pasture.

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 ¹	Loc2		
0-1	10YR 3 / 1	100					Sandy loam	
1-12	10YR 5 / 4	95	10YR 6 / 8	5			Sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 Mucky Mineral (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)		

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

Restrictive Layer (if observed):
 Type: N/A
 Depth (inches): N/A

Hydric soil present? Yes No

Remarks:
Soils are compacted in places, likely from livestock grazing.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 8, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-B-07-wet
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): draw Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.778815 Long: -77.505997 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents, nearly level NWI classification: PFO/PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is a PFO wetland at the ase of a bluff in the Falling Creek floodplain. The hydrology is primarily seep water from the bluff to the north. Field Sheet 22-WTL-07-wet	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	___ Surface Soil Cracks (B6)
<u>X</u> Surface Water (A1)	___ Sparsely Vegetated Concave Surface (B8)
___ High Water Table (A2)	<u>X</u> Drainage Patterns (B10)
<u>X</u> Saturation (A3)	___ Moss Trim Lines (B16)
___ Water Marks (B1)	___ Dry-Season Water Table (C2)
___ Sediment Deposits (B2)	<u>X</u> 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 <u>X</u> No <u> </u> Depth (inches): <u>Up to 2"</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>Surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>Surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **The primary source of hydrology appears to be from seep water from the ridge to the north.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-07-wet**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0**

20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Clethra alnifolia	10	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				

10 = Total Cover

50% of total cover: **5**

20% of total cover: **2**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Microstegium vimineum	70	Y	FAC
2	Carex frankii	30	Y	OBL
3	Sagittaria latifolia	10	N	OBL
4	Juncus effusus	5	N	FACW
5				
6				
7				
8				
9				
10				
11				

115 = Total Cover

50% of total cover: **57.5**

20% of total cover: **23**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Smilax rotundifolia	10	Y	FAC
2				
3				
4				
5				

10 = Total Cover

50% of total cover: **5**

20% of total cover: **2**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	<u>40</u> x 1 = <u>40</u>
FACW species	<u>5</u> x 2 = <u>10</u>
FAC species	<u>90</u> x 3 = <u>270</u>
FACU species	<u>0</u> x 4 = <u>0</u>
UPL species	<u>0</u> x 5 = <u>0</u>
Column totals	<u>135</u> (A) <u>320</u> (B)

Prevalence Index = B/A = 2.37

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Area was very boggy in places.

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 ¹	Loc2		
0-2	10YR 3 / 1	100					Loam	Mucky loam; a lot of organic matter
2-12	10YR 6 / 1	100					Sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> 2 cm Mucky Mineral (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)		

³Indicators 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:

Soils were very gray.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-B-07-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 7

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-B-07-wet PEM vegetation.



05-WTL-B-07-wet PFO vegetation.



05-WTL-B-07-wet PFO vegetation; surface water.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 8, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 05-WTL-B-07-upl
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 3%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.779162 Long: -77.505798 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents, nearly level NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	

Remarks: **This is the upland point on the ridge north of Wetland 7. It is very well drained.**
Field Sheet 22-WTL-07-upl

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
--	--

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

Remarks: **Upland point associated with Wetland 7 to the north. A deer stand and an old downed barbed wire fence are located in this area. The two largest trees are loblolly pine. The area is very well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-07-upl**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Pinus taeda	50	Y	FAC
2	Fagus grandifolia	30	Y	FACU
3				
4				
5				
6				
7				

80 = Total Cover
 50% of total cover: **40** 20% of total cover: **16**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Ilex decidua	20	Y	FACW
2				
3				
4				
5				
6				
7				
8				
9				

20 = Total Cover
 50% of total cover: **10** 20% of total cover: **4**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **2** (A)

Total Number of Dominant Species Across all Strata: **3** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **66.67%** (A/B)

Prevalence Index worksheet

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> 50 </u>	x 3 = <u> 150 </u>
FACU species <u> 30 </u>	x 4 = <u> 120 </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 = **3.10**

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)
<5% vegetation in the herb stratum.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 8, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 05-WTL-B-08-wet
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): none Slope (%): 10%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.776695 Long: -77.507526 Datum: NAD-1983
 Soil Map Unit Name: Pinkston-Mayodan sandy loams, 15 to 25 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u> No <u> </u>	

Remarks: **This is a hillside seep wetland that is on the ridge east of Falling Creek. This is very small and may be isolated.**
Field Sheet 22-WTL-08-wet

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		___ 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)	<u>X</u> 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)		___ FAC-Neutral Test (D5)

Field Observations:		Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface water present?	Yes <u>X</u> No <u> </u> Depth (inches): <u>1"</u>	
Water table present?	Yes <u>X</u> No <u> </u> Depth (inches): <u>Surface</u>	
Saturation present? (includes capillary fringe)	Yes <u>X</u> No <u> </u> Depth (inches): <u>Surface</u>	

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

Remarks: **This seep emerges from the hillside then goes back into the ground. This is a very small wetland.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-08-wet**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Ailanthus altissima	30	Y	FACU
2	Celtis laevigata	30	Y	FACW
3	Platanus occidentalis	10	N	FACW
4				
5				
6				
7				

70 = Total Cover
 50% of total cover: **35** 20% of total cover: **14**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Celtis laevigata	20	Y	FACW
2				
3				
4				
5				
6				
7				
8				
9				

20 = Total Cover
 50% of total cover: **10** 20% of total cover: **4**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Smilax rotundifolia	10	Y	FAC
2				
3				
4				
5				

10 = Total Cover
 50% of total cover: **5** 20% of total cover: **2**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **3** (A)

Total Number of Dominant Species Across all Strata: **4** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **75.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u> 0 </u>	x 1 = <u> 0 </u>
FACW species <u> 60 </u>	x 2 = <u> 120 </u>
FAC species <u> 10 </u>	x 3 = <u> 30 </u>
FACU species <u> 30 </u>	x 4 = <u> 120 </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 = **2.70**

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Sycamore & Tree of Heaven trees were rooted outside seep boundary.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-B-08-wet

Project/Site: DC2RVA-Segment 22

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 4

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-B-08-wet PFO vegetation.



05-WTL-B-08-wet PFO vegetation.



05-WTL-B-08-wet PFO vegetation.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 8, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 05-WTL-B-08-upl
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): none Slope (%): 20%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.776611 Long: -77.507308 Datum: NAD-1983
 Soil Map Unit Name: Kempsville gravelly fine sandy loam, 7 to 15 percent slopes NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> X </u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u> X </u> Wetland Hydrology Present? Yes <u> </u> No <u> X </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> X </u>
Remarks: The sample area was the upland near the seep. It is very well drained and the soils are not reduced. Field Sheet 22-WTL-08-upl	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> X </u> No <u> </u> Depth (inches): <u> </u> Water table present? Yes <u> X </u> No <u> </u> Depth (inches): <u> </u> Saturation present? Yes <u> X </u> No <u> </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u> X </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Area very well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-08-upl**

Tree Stratum (Plot Size: 30' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Platanus occidentalis	80	Y	FACW
2	Celtis laevigata	20	N	FACW
3	Quercus alba	10	N	FACU
4				
5				
6				
7				
		110	= Total Cover	
50% of total cover: 55		20% of total cover: 22		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Sapling/Shrub Stratum (Plot Size: 15' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Celtis laevigata	10	Y	FACW
2				
3				
4				
5				
6				
7				
8				
9				
		10	= Total Cover	
50% of total cover: 5		20% of total cover: 2		

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>110</u>	x 2 = <u>220</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>125</u>	(A) <u>280</u> (B)

Prevalence Index = B/A = 2.24

Herb Stratum (Plot Size: 5' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
		0	= Total Cover	
50% of total cover: 0		20% of total cover: 0		

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Woody Vine Stratum (Plot Size: _____)		Absolute % Cover	Dominant Species?	Indicator Status
1	Smilax glauca	5	Y	FACU
2				
3				
4				
5				
		5	= Total Cover	
50% of total cover: 2.5		20% of total cover: 1		

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 (1m) tall.

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

Woody vines - 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.)

Understory species absent.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 7, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 05-WTL-B-09-wet
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): swale/draw Local relief (concave, convex, none): concave Slope (%): 0%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.77537 Long: -77.508328 Datum: NAD-1983
 Soil Map Unit Name: Pacolet fine sandy loam, 7 to 15 percent slopes, eroded NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: The upper end of Kings Pond near Hwy 54 is a saturated PFO/PSS wetland. Field Sheet 22-WTL-02-wet	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	___ Surface Soil Cracks (B6)
<u>X</u> Surface Water (A1)	___ True Aquatic Plants (B14)
___ High Water Table (A2)	___ Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u>X</u> Hydrogen Sulfide Odor (C1)
___ Water Marks (B1)	<u>X</u> Oxidized Rhizospheres on Living Roots (C3)
___ Sediment Deposits (B2)	___ Presence of Reduced Iron (C4)
___ Drift Deposits (B3)	___ Recent Iron Reduction in Tilled Soils (C6)
___ Algal Mat or Crust (B4)	___ Thin Muck Surface (C7)
___ Iron Deposits (B5)	___ Other (Explain in Remarks)
___ Inundation Visible on Aerial Imagery (B7)	___ Moss Trim Lines (B16)
<u>X</u> Water-Stained Leaves (B9)	___ Dry-Season Water Table (C2)
___ Aquatic Fauna (B13)	___ 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)

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>Up to 3"</u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? (includes capillary fringe) Yes <u>X</u> No <u> </u> Depth (inches): <u>Surface</u>	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **36" and 24" culvert pipes on Mill property, north side of 54, going under 54, and outside the study area.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-09-wet**

Tree Stratum (Plot Size: 30' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Acer rubrum	90	Y	FAC
2				
3				
4				
5				
6				
7				

90 = Total Cover
 50% of total cover: **45** 20% of total cover: **18**

Sapling/Shrub Stratum (Plot Size: 15' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Clethra alnifolia	20	Y	FAC
2	Fraxinus pennsylvanica	20	Y	FACW
3				
4				
5				
6				
7				
8				
9				

40 = Total Cover
 50% of total cover: **20** 20% of total cover: **8**

Herb Stratum (Plot Size: 5' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Pilea pumila	40	N	OBL
2	Laportea canadensis	10	N	FAC
3	Leersia oryzoides	8	N	OBL
4	Acer rubrum	5	N	FAC
5	Leersia virginica	2	N	FACW
6				
7				
8				
9				
10				
11				

65 = Total Cover
 50% of total cover: **32.5** 20% of total cover: **13**

Woody Vine Stratum (Plot Size: _____)		Absolute % Cover	Dominant Species?	Indicator Status
1	Smilax glauca	2		FACU
2				
3				
4				
5				

2 = Total Cover
 50% of total cover: **1** 20% of total cover: **0.4**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **3** (A)

Total Number of Dominant Species Across all Strata: **3** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **100.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:	
OBL species <u> 48 </u>	x 1 =	<u> 48 </u>
FACW species <u> 22 </u>	x 2 =	<u> 44 </u>
FAC species <u> 125 </u>	x 3 =	<u> 375 </u>
FACU species <u> 2 </u>	x 4 =	<u> 8 </u>
UPL species <u> 0 </u>	x 5 =	<u> 0 </u>
Column totals <u> 197 </u>	(A)	<u> 475 </u> (B)

Prevalence Index = B/A = **2.41**

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Large red maples overhang the wetland (some are in and some are just outside the boundary).

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-B-09-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 8

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-B-09-wet PFO vegetation.



05-WTL-B-09-wet

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 7, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 05-WTL-B-09-upl
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Hillslope above wetland Local relief (concave, convex, none): none Slope (%): 45%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.77529 Long: -77.508423 Datum: NAD-1983
 Soil Map Unit Name: Udults-Ochrepts complex, moderately steep NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: This upland point in 10 feet higher than the Kings Pond wetland. It is very well drained and does not have hydric soils. Field Sheet 22-WTL-02-upl	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **North facing hillslope is very well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-09-upl**

Tree Stratum (Plot Size: 30' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Quercus alba	80	Y	FACU
2	Fagus grandifolia	20	Y	FACU
3				
4				
5				
6				
7				
		100 = Total Cover		
50% of total cover: 50		20% of total cover: 20		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Sapling/Shrub Stratum (Plot Size: 15' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Fagus grandifolia	60	Y	FACU
2	Clethra alnifolia	2	N	FAC
3	Cornus florida	2	N	FACU
4				
5				
6				
7				
8				
9				
		64 = Total Cover		
50% of total cover: 32		20% of total cover: 12.8		

Prevalence Index worksheet

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>2</u>	x 3 =	<u>6</u>
FACU species <u>162</u>	x 4 =	<u>648</u>
UPL species <u>0</u>	x 5 =	<u>0</u>
Column totals <u>164</u>	(A)	<u>654</u> (B)

Prevalence Index = B/A = 3.99

Herb Stratum (Plot Size: 5' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
		0 = Total Cover		
50% of total cover: 0		20% of total cover: 0		

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Woody Vine Stratum (Plot Size: _____)		Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
		0 = Total Cover		
50% of total cover: 0		20% of total cover: 0		

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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No **X**

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

Understory/herbaceous stratum was nearly absent.

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 ¹	Loc2		
0-3	10YR 5 / 3	100					loam	No mottling.
3-12	10YR 5 / 4	100					loam	No mottling.

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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"/> Piedmont Floodplain Soils (F19)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 2 cm Mucky Mineral (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)	
<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)		

³Indicators 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 X

Remarks:

Soils were well-drained.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 6, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 05-WTL-B-10-wet
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): none Slope (%): 10%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.771315 Long: -77.509834 Datum: NAD-1983
 Soil Map Unit Name: Udalfs-Ochrepts complex, steep NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: **This is a hillside seep wetland. It is below a draw that funnels water toward the seep.**
Field Sheet 22-WTL-01-wet

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	___ Surface Soil Cracks (B6)
___ Surface Water (A1)	___ Sparsely Vegetated Concave Surface (B8)
___ High Water Table (A2)	___ Drainage Patterns (B10)
<u>X</u> 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 <u>X</u> No <u> </u> Depth (inches): <u>Up to 1"</u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? (includes capillary fringe) Yes <u>X</u> No <u> </u> Depth (inches): <u>Surface</u>	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	--

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

Remarks: **Seep water emerges from hillside and creates wet areas along the hillside.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-10-wet**

Tree Stratum (Plot Size: <u>30' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>60</u>	<u>Y</u>	<u>FAC</u>
2	<u>Carpinus caroliniana</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				
		<u>100</u> = Total Cover		
50% of total cover: <u>50</u>		20% of total cover: <u>20</u>		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Sapling/Shrub Stratum (Plot Size: <u>15' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Fraxinus pennsylvanica</u>	<u>10</u>	<u>Y</u>	<u>FACW</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>		

Prevalence Index worksheet

Total % Cover of:	Multiply by:	
OBL species <u>50</u>	x 1 =	<u>50</u>
FACW species <u>40</u>	x 2 =	<u>80</u>
FAC species <u>120</u>	x 3 =	<u>360</u>
FACU species <u>0</u>	x 4 =	<u>0</u>
UPL species <u>0</u>	x 5 =	<u>0</u>
Column totals <u>210</u>	(A)	<u>490</u> (B)

Prevalence Index = B/A = 2.33

Herb Stratum (Plot Size: <u>5' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Leersia virginica</u>	<u>50</u>	<u>N</u>	<u>OBL</u>
2	<u>Onoclea sensibilis</u>	<u>30</u>	<u>N</u>	<u>FACW</u>
3	<u>Campsis radicans</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
4				
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>		

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Woody Vine Stratum (Plot Size: _____)		Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
		<u>0</u> = Total Cover		
50% of total cover: <u>0</u>		20% of total cover: <u>0</u>		

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 (1m) tall.

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

Woody vines - 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.)

Trumpet creeper was free-standing.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-B-10-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 8

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-B-10-wet PFO vegetation.

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-10-upl**

Tree Stratum (Plot Size: 30' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Fagus grandifolia	90	Y	FACU
2	Acer rubrum	10	N	FAC
3				
4				
5				
6				
7				
		100 = Total Cover		
50% of total cover: 50		20% of total cover: 20		

Sapling/Shrub Stratum (Plot Size: 15' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Ilex opaca	20	Y	FACU
2	Fagus grandifolia	5	N	FACU
3	Quercus alba	5	N	FACU
4	Frangula caroliniana	5	N	FAC
5				
6				
7				
8				
9				
		35 = Total Cover		
50% of total cover: 17.5		20% of total cover: 7		

Herb Stratum (Plot Size: 5' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Vitis spp.	15	N	
2	Parthenocissus quinquefolia	10	N	FACU
3				
4				
5				
6				
7				
8				
9				
10				
11				
		25 = Total Cover		
50% of total cover: 12.5		20% of total cover: 5		

Woody Vine Stratum (Plot Size: _____)		Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
		0 = Total Cover		
50% of total cover: 0		20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index worksheet

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>15</u>	x 3 = <u>45</u>
FACU species <u>130</u>	x 4 = <u>520</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>145</u> (A)	<u>565</u> (B)

Prevalence Index = B/A = 3.90

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

Herbaceous layer was thin due to thick overstory/closed canopy.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 7, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 05-WTL-B-11-wet
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Draw Local relief (concave, convex, none): Concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.770658 Long: -77.509952 Datum: NAD-1983
 Soil Map Unit Name: Orangeburg-Facevill fine sandy loams, 2 to 7 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> X </u> No <u> </u> Hydric Soil Present? Yes <u> X </u> No <u> </u> Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	<p align="center">Is the Sampled Area within a Wetland?</p> Yes <u> X </u> No <u> </u>
Remarks: This is a draining draw/swale forested wetland that has been clear-cut north and south of the draw. It has obligate plants and is poorly drained. Field Sheet 22-WTL-04-wet	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> X </u> No <u> </u> Depth (inches): <u>0-4"</u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> X </u> No <u> </u> Depth (inches): <u>Surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> X </u> No <u> </u>
--	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **In channel through wetland up to 4 inches deep. Most of the bottom of the draw is saturated. The slopes to the upland are abrupt.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-11-wet**

Tree Stratum (Plot Size: 30' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Acer rubrum	60	Y	FAC
2	Liriodendron tulipifera	40	Y	FACU
3				
4				
5				
6				
7				
		100 = Total Cover		
50% of total cover: 50		20% of total cover: 20		

Sapling/Shrub Stratum (Plot Size: 15' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Clethra alnifolia	10	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				
		10 = Total Cover		
50% of total cover: 5		20% of total cover: 2		

Herb Stratum (Plot Size: 5' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Glyceria striata	60	Y	OBL
2	Juncus effusus	40	Y	FACW
3				
4				
5				
6				
7				
8				
9				
10				
11				
		100 = Total Cover		
50% of total cover: 50		20% of total cover: 20		

Woody Vine Stratum (Plot Size: _____)		Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
		0 = Total Cover		
50% of total cover: 0		20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 80.00% (A/B)

Prevalence Index worksheet

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>70</u>	x 3 =	<u>210</u>
FACU species <u>40</u>	x 4 =	<u>160</u>
UPL species <u>0</u>	x 5 =	<u>0</u>
Column totals <u>210</u>	(A)	<u>510</u> (B)

Prevalence Index = B/A = 2.43

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Most overstory trees were rooted in adjacent upland.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-B-11-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 7

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-B-11-wet PFO vegetation.



05-WTL-B-11-wet PFO vegetation.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 7, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-B-11-upl
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): none Slope (%): 5-10%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.770774 Long: -77.509949 Datum: NAD-1983
 Soil Map Unit Name: Orangeburg-Facevill fine sandy loams, 2 to 7 percent slopes NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> X </u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u> X </u> Wetland Hydrology Present? Yes <u> </u> No <u> X </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> X </u>
Remarks: At the edge of the clear-cut (outside tree line) slope steepens toward south edge of the tree line (5-10%). The area is very well drained. Field Sheet 22-WTL-04-upl	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u> X </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **The hillslope is very well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-11-upl**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Acer rubrum	30	Y	FAC
2	Liriodendron tulipifera	30	Y	FACU
3				
4				
5				
6				
7				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

60 = Total Cover

50% of total cover: 30 20% of total cover: 12

Prevalence Index worksheet

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>105</u>	x 3 = <u>315</u>
FACU species <u>35</u>	x 4 = <u>140</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>140</u>	(A) <u>455</u> (B)

Prevalence Index = B/A = 3.25

Sapling/Shrub Stratum (Plot Size: **15' diameter**)

		Absolute % Cover	Dominant Species?	Indicator Status
1	Liquidambar styraciflua	60	Y	FAC
2	Ilex opaca	5	N	FACU
3	Clethra alnifolia	5	N	FAC
4	Amelanchier arborea	5	N	FAC
5	Pinus taeda	5	N	FAC
6				
7				
8				
9				

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

80 = Total Cover

50% of total cover: 40 20% of total cover: 16

Herb Stratum (Plot Size: **5' diameter**)

		Absolute % Cover	Dominant Species?	Indicator Status
1				OBL
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Woody Vine Stratum (Plot Size: _____)

		Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Hydrophytic Vegetation Present? Yes No

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

Clear cut trees were primarily growing out of stumps.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 8, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-B-12-wet
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): draw Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.767204 Long: -77.509599 Datum: NAD-1983
 Soil Map Unit Name: Orangeburg-Facevill fine sandy loams, 2 to 7 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This wetland lies in a large draw that was recently clear-cut on both sides of the draw. It has many channels that are braided through the wetland. Field Sheet 22-WTL-06-wet	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	___ Surface Soil Cracks (B6)
<u>X</u> Surface Water (A1)	___ True Aquatic Plants (B14)
___ High Water Table (A2)	___ Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u>X</u> Hydrogen Sulfide Odor (C1)
___ Water Marks (B1)	<u>X</u> Oxidized Rhizospheres on Living Roots (C3)
___ Sediment Deposits (B2)	___ Moss Trim Lines (B16)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)
<u>X</u> Water-Stained Leaves (B9)	___ Dry-Season Water Table (C2)
___ Aquatic Fauna (B13)	<u>X</u> 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)

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>Up to 6"</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **This area receives drainage from the adjacent hillsides and seep water from the hills. It also has a braided stream through the bottom.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-12-wet**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Acer rubrum	5	Y	FAC
2	Liriodendron tulipifera	5	Y	FACU
3				
4				
5				
6				
7				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 60.00% (A/B)

10 = Total Cover

50% of total cover: 5 20% of total cover: 2

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>20</u>	x 1 = <u>20</u>
FACW species <u>80</u>	x 2 = <u>160</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>160</u>	(A) <u>385</u> (B)

Prevalence Index = B/A = 2.41

Sapling/Shrub Stratum (Plot Size: **15' diameter**)

1	Acer rubrum	20	Y	FAC
2	Liriodendron tulipifera	20	Y	FACU
3				
4				
5				
6				
7				
8				
9				

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

40 = Total Cover

50% of total cover: 20 20% of total cover: 8

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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Herb Stratum (Plot Size: **5' diameter**)

1	Juncus effusus	80	Y	FACW
2	Carex frankii	15	N	OBL
3	Clethra alnifolia	10	N	FAC
4	Osmunda regalis	5	N	OBL
5				
6				
7				
8				
9				
10				
11				

Hydrophytic Vegetation Present? Yes No

Woody Vine Stratum (Plot Size: _____)

1				
2				
3				
4				
5				

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

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

Just inside clear-cut line. Plants are strongly hydrophytic and variable, depending upon the amount of water/saturation present.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-B-12-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 8

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-B-12-wet Typical habitat.



05-WTL-B-12-wet Wetland near clearcut.

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-12-upl**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Rubus spp.	70	Y	
2	Liriodendron tulipifera	10	N	FACU
3	Taraxacum officinale	5	N	FACU
4				
5				
6				
7				
8				
9				
10				
11				

85 = Total Cover

50% of total cover: **42.5** 20% of total cover: **17**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across all Strata: **1** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **0.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	0 x 1 = 0
FACW species	0 x 2 = 0
FAC species	0 x 3 = 0
FACU species	15 x 4 = 60
UPL species	0 x 5 = 0
Column totals	15 (A) 60 (B)

Prevalence Index = B/A = **4.00**

Hydrophytic Vegetation Indicators:

- 1 -Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is ≤3.0¹
- 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present?

Yes _____ No **X**

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

Weedy briar growth since clear-cutting in recent past; approximately 15% unvegetated.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 8, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-B-13-wet
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Bottomland Local relief (concave, convex, none): concave Slope (%): 0%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.756503 Long: -77.507412 Datum: NAD-1983
 Soil Map Unit Name: Orangeburg-Facevill fine sandy loams, 2 to 7 percent slopes NWI classification: PFO/PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u> No <u> </u>	

Remarks: **Stream channel runs through wetland in a bottomland hardwood forest. The portion in the gas ROW is PEM.**
Field Sheet 22-WTL-05-wet

HYDROLOGY

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

Field Observations:		Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface water present?	Yes <u>X</u> No <u> </u> Depth (inches): <u>0-4" *</u>	
Water table present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe)	Yes <u>X</u> No <u> </u> Depth (inches): <u>6"</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **In the woods and transmission/pipeline corridor near plantation pipeline facility, soil core saturated at 6 inches. *Surface water is present approximately 0-4 inches in stream channel.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-13-wet**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Liquidambar styraciflua	80	Y	FAC
2	Acer rubrum	30	Y	FAC
3				
4				
5				
6				
7				
		110 = Total Cover		
50% of total cover: 55		20% of total cover: 22		

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Clethra alnifolia	40	Y	FAC
2	Ilex opaca	40	Y	FACU
3	Vaccinium arboreum	5	N	FACU
4				
5				
6				
7				
8				
9				
		85 = Total Cover		
50% of total cover: 42.5		20% of total cover: 17		

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Osmunda regalis	20	Y	OBL
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
		20 = Total Cover		
50% of total cover: 10		20% of total cover: 4		

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
		0 = Total Cover		
50% of total cover: 0		20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 80.00% (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>20</u>	x 1 = <u>20</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>150</u>	x 3 = <u>450</u>
FACU species <u>45</u>	x 4 = <u>180</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>215</u>	(A) <u>650</u> (B)

Prevalence Index = B/A = 3.02

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Canopy over wetland stream; wetland point taken from edge of stream channel in PFO. *Juncus effusus* and *Leeria oryzoides* are present in the transmission ROW.

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 ¹	Loc2		
0-3	10YR 3.0 / 1	100					Loam	
3-12	10YR 5 / 1	100					Sandy loam	Saturated at 6"

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> 2 cm Mucky Mineral (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)		

³Indicators 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:

Soils are strongly reduced.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-B-13-wet

Project/Site: DC2RVA-Area 5

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 9

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-B-13-wet PEM vegetation and inundation.



05-WTL-B-13-wet PEM vegetation in gas line ROW.



05-WTL-B-13-wet PEM in edge of ag field and gas line corridor.



05-WTL-B-13-wet PFO vegetation and shallow root system on fallen trees.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 8, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 05-WTL-B-13-upl
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): none Slope (%): 3%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.757407 Long: -77.507921 Datum: NAD-1983
 Soil Map Unit Name: Orangeburg-Faceville fine sandy loams, 2 to 7 percent slopes NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland?	Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>		
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>		

Remarks: **This is the upland point north of Wetland 5. It is moderately well-drained and has upland plants. The soils are not reduced. Field Sheet 22-WTL-05-upl**

HYDROLOGY

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

Field Observations:			
Surface water present?	Yes <u> </u> No <u>X</u>	Depth (inches): <u> </u>	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Water table present?	Yes <u> </u> No <u>X</u>	Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe)	Yes <u> </u> No <u>X</u>	Depth (inches): <u> </u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Area slopes to wetland but moderately well-drained.

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-13-upl**

Tree Stratum (Plot Size: 30' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Quercus alba	95	Y	FACU
2	Ilex decidua	15	N	FACW
3				
4				
5				
6				
7				
		110	= Total Cover	
50% of total cover: 55		20% of total cover: 22		

Sapling/Shrub Stratum (Plot Size: 15' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Ilex decidua	5	Y	FACW
2	Frangula caroliniana	5	Y	FAC
3				
4				
5				
6				
7				
8				
9				
		10	= Total Cover	
50% of total cover: 5		20% of total cover: 2		

Herb Stratum (Plot Size: 5' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Vaccinium angustifolium	2	N	FACU
2	Ilex opaca	2	N	FACU
3				
4				
5				
6				
7				
8				
9				
10				
11				
		4	= Total Cover	
50% of total cover: 2		20% of total cover: 0.8		

Woody Vine Stratum (Plot Size: _____)		Absolute % Cover	Dominant Species?	Indicator Status
1	Smilax glauca	2	N	FACU
2				
3				
4				
5				
		2	= Total Cover	
50% of total cover: 1		20% of total cover: 0.4		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Prevalence Index worksheet

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>5</u>	x 3 = <u>15</u>
FACU species <u>101</u>	x 4 = <u>404</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>126</u>	(A) <u>459</u> (B)

Prevalence Index = B/A = 3.64

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Understory nearly absent due to closed canopy.

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 ¹	Loc2		
0-3	10YR 3 / 2	100					Loam	
3-12	10YR 5 / 4	100					Sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 Mucky Mineral (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)		

³Indicators 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 **X** _____

Remarks:
3 inch duff layer.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 20, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 05-WTL-B-14-wet
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): stream terrace Local relief (concave, convex, none): none Slope (%): 1-2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.742609 Long: -77.502876 Datum: NAD-1983
 Soil Map Unit Name: Coxville loam NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u> No <u> </u>	

Remarks: **This is a wetland draw that is fed by 22-STR-12. As the draw near the pond outside the study area, it fans out and is poorly drained. Field Sheet 22-A-WTL-16-wet**

HYDROLOGY

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

Field Observations:	
Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>Up to 3"</u>	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe) Yes <u>X</u> No <u> </u> Depth (inches): <u>6"</u>	

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

Remarks: **Area receives runoff from 22-STR-12 and appears to remain saturated for long durations. Inundation in meandering stream (22-STR-12) channel only.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-14-wet**

Tree Stratum (Plot Size: 30' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Liquidambar styraciflua	40	Y	FAC
2	Quercus phellos	30	Y	FAC
3				
4				
5				
6				
7				

70 = Total Cover

50% of total cover: **35**

20% of total cover: **14**

Sapling/Shrub Stratum (Plot Size: 15' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Acer rubrum	10	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				

10 = Total Cover

50% of total cover: **5**

20% of total cover: **2**

Herb Stratum (Plot Size: 5' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Microstegium vimineum	30	Y	FAC
2	Juncus acuminatus	20	Y	OBL
3	Pilea pumila	2	N	FACW
4				
5				
6				
7				
8				
9				
10				
11				

52 = Total Cover

50% of total cover: **26**

20% of total cover: **10.4**

Woody Vine Stratum (Plot Size: _____)		Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				

0 = Total Cover

50% of total cover: **0**

20% of total cover: **0**

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)

Prevalence Index worksheet

Total % Cover of:	Multiply by:	
OBL species 20	x 1 =	20
FACW species 2	x 2 =	4
FAC species 110	x 3 =	330
FACU species 0	x 4 =	0
UPL species 0	x 5 =	0
Column totals 132	(A)	354 (B)

Prevalence Index = B/A = **2.68**

Hydrophytic Vegetation Indicators:

- 1 -Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is $\leq 3.0^1$
- 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

40% of understory floor is non-vegetated in the herbaceous layer.

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 ¹	Loc2		
0-1	10YR 3 / 1	100					Sandy loam	
1-12	10YR 6 / 1	100					Sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> 2 cm Mucky Mineral (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)		

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

Restrictive Layer (if observed):
 Type: N/A
 Depth (inches): N/A

Hydric soil present? Yes X No _____

Remarks:
Soils were saturated at 6 inches.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-B-14-wet

Project/Site: DC2RVA-Segment 22

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 8

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-B-14-wet PFO vegetation.



05-WTL-B-14-wet PFO vegetation.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 20, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 05-WTL-B-14-upl
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 3%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.742523 Long: -77.502969 Datum: NAD-1983
 Soil Map Unit Name: Bourne fine sandy loam, 2 to 7 percent NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> X </u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u> X </u> Wetland Hydrology Present? Yes <u> </u> No <u> X </u>	Is the Sampled Area within a Wetland? Yes No <u> X </u>
Remarks: This is an upland data point near wetland 16. Field Sheet 22-A-WTL-16-upl	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u> X </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Upland point is associated with Wetland 14, west of a small lake, north of a cleared field.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-14-upl**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Quercus alba	40	Y	FACU
2	Pinus taeda	40	Y	FAC
3				
4				
5				
6				
7				

80 = Total Cover
 50% of total cover: **40** 20% of total cover: **16**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Pinus taeda	10	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				

10 = Total Cover
 50% of total cover: **5** 20% of total cover: **2**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **2** (A)

Total Number of Dominant Species Across all Strata: **3** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **66.67%** (A/B)

Prevalence Index worksheet

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> 50 </u>	x 3 = <u> 150 </u>
FACU species <u> 40 </u>	x 4 = <u> 160 </u>
UPL species <u> 0 </u>	x 5 = <u> 0 </u>
Column totals <u> 90 </u>	(A) <u> 310 </u> (B)

Prevalence Index = B/A = **3.44**

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

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 ¹	Loc2		
0-3	10YR 3 / 2	100					Sandy loam	No mottling.
3-12	10YR 6 / 2	100					Sandy loam	No mottling.

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 Mucky Mineral (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)		

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

Restrictive Layer (if observed):
 Type: N/A
 Depth (inches): N/A

Hydric soil present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 20, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 05-WTL-B-15-wet
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): wet hillslope Local relief (concave, convex, none): none Slope (%): 1-2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.737135 Long: -77.50074 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents, nearly level NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u> No <u> </u>	

Remarks: **Clearcut area, damage from logging activity. Large seep PEM wetland emerges from hillslope to the northwest, then flows into floodplain wetland along 22-STR-13. Very difficult to draw an accurate line on the north side of creek.**
Field Sheet 22-A-WTL-17-wet

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		___ Surface Soil Cracks (B6)
<u>X</u> Surface Water (A1)	___ True Aquatic Plants (B14)	___ Sparsely Vegetated Concave Surface (B8)
___ High Water Table (A2)	___ Hydrogen Sulfide Odor (C1)	___ Drainage Patterns (B10)
<u>X</u> Saturation (A3)	<u>X</u> 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)		___ FAC-Neutral Test (D5)

Field Observations:				Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface water present?	Yes <u>X</u> No <u> </u>	Depth (inches): <u>Up to 3"</u>		
Water table present?	Yes <u> </u> No <u>X</u>	Depth (inches): <u> </u>		
Saturation present? (includes capillary fringe)	Yes <u>X</u> No <u> </u>	Depth (inches): <u>surface</u>		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Inundation in small, low lying areas. Lot of drainage from logging.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-15-wet**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Pinus taeda	10	Y	FAC
2	Ilex decidua	5	Y	FACW
3				
4				
5				
6				
7				
8				
9				

15 = Total Cover
 50% of total cover: **7.5** 20% of total cover: **3**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Juncus effusus	50	Y	FACW
2	Juncus acuminatus	50	Y	OBL
3	Smilax glauca	10	N	FACU
4	Carex spp.	2	N	
5				
6				
7				
8				
9				
10				
11				

112 = Total Cover
 50% of total cover: **56** 20% of total cover: **22.4**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **4** (A)

Total Number of Dominant Species Across all Strata: **4** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **100.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	50 x 1 = 50
FACW species	55 x 2 = 110
FAC species	10 x 3 = 30
FACU species	10 x 4 = 40
UPL species	0 x 5 = 0
Column totals	125 (A) 230 (B)

Prevalence Index = B/A = **1.84**

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Clear cut area, few tall trees remaining, loblolly pine along edge of clearcut field.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-B-15-wet

Project/Site: DC2RVA-Segment 22

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	3	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 9

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-B-15-wet PEM vegetation; clear-cut area.



05-WTL-B-15-wet PEM vegetation; clear-cut area.

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-15-upl**

Tree Stratum (Plot Size: 30' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Liquidambar styraciflua	30	Y	FAC
2	Quercus alba	25	Y	FACU
3	Acer rubrum	20	Y	FAC
4	Diospyros virginiana	15	N	FAC
5				
6				
7				

90 = Total Cover
 50% of total cover: **45** 20% of total cover: **18**

Sapling/Shrub Stratum (Plot Size: 15' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Cornus florida	10	Y	FACU
2				
3				
4				
5				
6				
7				
8				
9				

10 = Total Cover
 50% of total cover: **5** 20% of total cover: **2**

Herb Stratum (Plot Size: 5' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Woody Vine Stratum (Plot Size: _____)		Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **2** (A)

Total Number of Dominant Species Across all Strata: **4** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **50.00%** (A/B)

Prevalence Index worksheet

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> 65 </u>	x 3 = <u> 195 </u>
FACU species <u> 35 </u>	x 4 = <u> 140 </u>
UPL species <u> 0 </u>	x 5 = <u> 0 </u>
Column totals <u> 100 </u>	(A) <u> 335 </u> (B)

Prevalence Index = B/A = **3.35**

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No **X**

Remarks: (Include photo numbers here or on a separate sheet.)
Clear cut area, few tall trees remaining, loblolly pine along edge of clearcut field.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 10, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 05-WTL-B-16-wet
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.731029 Long: -77.49749 Datum: NAD-1983
 Soil Map Unit Name: Dunbar fine sandy loam NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: In the cornfield off Elmont Road, a small patch of planted corn exhibits stress and stunted growth. Rush and sedges comprise the majority of the wetland. Field Sheet 22-A-WTL-11-wet	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>Surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **This wet swale in the agricultural field is probably tilled and planted in dry years.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-16-wet**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Luzula acuminata	40	Y	FAC
2	Juncus acuminatus	40	Y	OBL
3	Echinochloa muricata	10	N	FACW
4	Rhynchospora capitellata	10	N	OBL
5	Juncus effusus	2	N	FACW
6				
7				
8				
9				
10				
11				

102 = Total Cover

50% of total cover: **51** 20% of total cover: **20.4**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **2** (A)

Total Number of Dominant Species Across all Strata: **2** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **100.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	<u> 50 </u> x 1 = <u> 50 </u>
FACW species	<u> 12 </u> x 2 = <u> 24 </u>
FAC species	<u> 40 </u> x 3 = <u> 120 </u>
FACU species	<u> 0 </u> x 4 = <u> 0 </u>
UPL species	<u> 0 </u> x 5 = <u> 0 </u>
Column totals	<u> 102 </u> (A) <u> 194 </u> (B)

Prevalence Index = B/A = **1.90**

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

The overall stand of the herbaceous layer was somewhat thin. The area was probably tilled in the fall of 2015.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-B-16-wet

Project/Site: DC2RVA-Segment 22

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 8

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-B-16-wet PEM vegetation near cornfield.



05-WTL-B-16-wet PEM vegetation near cornfield.



05-WTL-B-16-wet PEM vegetation near cornfield.



05-WTL-B-16-wet PEM vegetation near cornfield.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 05 City/County: Ashland/Hanover Sampling Date: June 9, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 05-WTL-B-16-upl
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Agricultural field Local relief (concave, convex, none): none Slope (%): 3%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.731217 Long: -77.497261 Datum: NAD-1983
 Soil Map Unit Name: Dunbar fine sandy loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	

Remarks: **The upland point near Wetland 11 was in the tilled corn field. It is 12-18 inches higher than the wet swale.**
Field Sheet 22-WTL-11-upl

HYDROLOGY

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

Field Observations:	
Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Upland point is located at the edge of cornfield along Elmont Road.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-16-upl**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	_____	_____	_____	_____
2	_____	_____	_____	_____
3	_____	_____	_____	_____
4	_____	_____	_____	_____
5	_____	_____	_____	_____
6	_____	_____	_____	_____
7	_____	_____	_____	_____

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	_____	_____	_____	_____
2	_____	_____	_____	_____
3	_____	_____	_____	_____
4	_____	_____	_____	_____
5	_____	_____	_____	_____
6	_____	_____	_____	_____
7	_____	_____	_____	_____
8	_____	_____	_____	_____
9	_____	_____	_____	_____

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Agricultural corn species	_____	_____	_____
2	_____	_____	_____	_____
3	_____	_____	_____	_____
4	_____	_____	_____	_____
5	_____	_____	_____	_____
6	_____	_____	_____	_____
7	_____	_____	_____	_____
8	_____	_____	_____	_____
9	_____	_____	_____	_____
10	_____	_____	_____	_____
11	_____	_____	_____	_____

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	_____	_____	_____	_____
2	_____	_____	_____	_____
3	_____	_____	_____	_____
4	_____	_____	_____	_____
5	_____	_____	_____	_____

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 0 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet

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> 0 </u> x 4 = <u> 0 </u>
UPL species	<u> 0 </u> x 5 = <u> 0 </u>
Column totals	<u> 0 </u> (A) <u> 0 </u> (B)

Prevalence Index = B/A =

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is $\leq 3.0^1$
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No **X**

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

Plowed cornfield, likely round-up ready because other plants were absent.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 10, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 05-WTL-B-17-wet
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Pine flatwood Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.72875 Long: -77.49707 Datum: NAD-1983
 Soil Map Unit Name: Norfolk fine sandy loam, 2 to 7 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: **The wooded area behind horses on Elmont Road is a depressional bottomland hardwood wetland. The wetland boundaries are not well defined and are somewhat variable, or a mosaic pattern in places.**
Field Sheet 22-A-WTL-12-wet

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u><1 inch</u>	
Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe) Yes <u>X</u> No <u> </u> Depth (inches): <u>Surface</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Saturated at 4 inches. In low places, saturated at surface.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-17-wet**

Tree Stratum (Plot Size: 30' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Acer rubrum	80	Y	FAC
2	Liquidambar styraciflua	60	Y	FAC
3	Pinus taeda	30	N	FAC
4				
5				
6				
7				

170 = Total Cover

50% of total cover: **85** 20% of total cover: **34**

Sapling/Shrub Stratum (Plot Size: 15' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Lindera benzoin	30	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				

30 = Total Cover

50% of total cover: **15** 20% of total cover: **6**

Herb Stratum (Plot Size: 5' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Clethra alnifolia	20	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

20 = Total Cover

50% of total cover: **10** 20% of total cover: **4**

Woody Vine Stratum (Plot Size: _____)		Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **4** (A)

Total Number of Dominant Species Across all Strata: **4** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **100.00%** (A/B)

Prevalence Index worksheet

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> 220 </u>	x 3 =	<u> 660 </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> 660 </u> (B)

Prevalence Index = B/A = **3.00**

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

40% of the herbaceous layer is unvegetated in sample point area.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-B-17-wet

Project/Site: DC2RVA-Segment 22

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	3	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	3	

Total Score 12

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-B-17-wet PFO vegetation; saturated soils.



05-WTL-B-17-wet PFO vegetation; saturated soils.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 10, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 05-WTL-B-17-upl
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Spoil pile Local relief (concave, convex, none): convex Slope (%): 5%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.729466 Long: -77.497081 Datum: NAD-1983
 Soil Map Unit Name: Norfolk fine sandy loam, 2 to 7 percent slopes NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u> X </u> Hydric Soil Present? Yes <u> </u> No <u> X </u> Wetland Hydrology Present? Yes <u> </u> No <u> X </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> X </u>
Remarks: This upload point near Wetland 12 is on a spoil pile behind the Elmont Road residences. Based on the trees on the spoils, they have been there for a long time. Field Sheet 22-A-WTL-12-upl	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u> X </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Upland point on raised hump behind lawn, 4 feet higher than adjacent, well-drained, forest area.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-17-upl**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Quercus alba	60	N	FACU
2	Acer rubrum	40	Y	FAC
3	Liquidambar styraciflua	15	N	FAC
4				
5				
6				
7				
		115	= Total Cover	
50% of total cover:		57.5	20% of total cover: 23	

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
		0	= Total Cover	
50% of total cover:		0	20% of total cover: 0	

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Toxicodendron radicans	20	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
		20	= Total Cover	
50% of total cover:		10	20% of total cover: 4	

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
		0	= Total Cover	
50% of total cover:		0	20% of total cover: 0	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index worksheet

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>75</u>	x 3 = <u>225</u>
FACU species <u>60</u>	x 4 = <u>240</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>135</u>	(A) <u>465</u> (B)

Prevalence Index = B/A = 3.44

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Spoil area is well-drained and has upland plants.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 10, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 05-WTL-B-18-wet
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.72773 Long: -77.496256 Datum: NAD-1983
 Soil Map Unit Name: Dunbar fine sandy loam NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: **This is a wet swale in a relatively large block of timber. Most of this small swale lies within the study corridor. Field Sheet 22-WTL-13-wet 1**

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>2"</u>	
Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe) Yes <u>X</u> No <u> </u> Depth (inches): <u>Surface</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Saturated at 3 inches in soil core. The swale is fairly well-defined.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-18-wet**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Pinus taeda	30	Y	FAC
2	Acer rubrum	20	N	FAC
3				
4				
5				
6				
7				

50 = Total Cover
 50% of total cover: **25** 20% of total cover: **10**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Smilax rotundifolia	10	Y	FAC
2				
3				
4				
5				

10 = Total Cover
 50% of total cover: **5** 20% of total cover: **2**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **2** (A)

Total Number of Dominant Species Across all Strata: **2** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **100.00%** (A/B)

Prevalence Index worksheet

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> 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> 60 </u>	(A) <u> 180 </u> (B)

Prevalence Index = B/A = **3.00**

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

No herbaceous layer present. The wetland floor is covered with pine needles. The pine and maple trees are primarily on the wetland margins.

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 ¹	Loc2		
0-1	10YR 3 / 2	100					Sandy loam	
1-12	10YR 6 / 1	100					Sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> 2 cm Mucky Mineral (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)		

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

Restrictive Layer (if observed):
 Type: N/A
 Depth (inches): N/A Hydric soil present? Yes X No _____

Remarks:
Slight sulfide odor observed. A lot of organic material is present in the top two inches of the core.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-B-18-wet

Project/Site: DC2RVA-Segment 22

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	2	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	4	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	3	

Total Score 14

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-B-18-wet PFO vegetation.



05-WTL-B-18-wet PFO vegetation.



05-WTL-B-18-wet PFO vegetation; surface water.



05-WTL-B-18-wet PFO vegetation; saturated soils.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 10, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 05-WTL-B-18-upl
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): ridge Local relief (concave, convex, none): convex Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.727814 Long: 0 Datum: NAD-1983
 Soil Map Unit Name: Dunbar fine sandy loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	

Remarks: **This is an upland point on a low ridge near wetland 13. It is on a raised area above the wetland depression.**
Field Sheet 22-WTL-13-upl 1

HYDROLOGY

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

Field Observations:		Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Surface water present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Water table present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe)	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	

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

Remarks: **Upland point is 12-18 inches higher than wetland. Area is moderately well-drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-18-upl**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Acer rubrum	60	Y	FAC
2	Quercus alba	40	N	FACU
3				
4				
5				
6				
7				

100 = Total Cover

50% of total cover: **50** 20% of total cover: **20**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Vaccinium pallidum	80	Y	
2	Leersia virginica	5	N	FACW
3				
4				
5				
6				
7				
8				
9				
10				
11				

85 = Total Cover

50% of total cover: **42.5** 20% of total cover: **17**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

Prevalence Index worksheet

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> 60 </u>	x 3 = <u> 180 </u>
FACU species <u> 40 </u>	x 4 = <u> 160 </u>
UPL species <u> 0 </u>	x 5 = <u> 0 </u>
Column totals <u> 105 </u>	(A) <u> 350 </u> (B)

Prevalence Index = B/A = 3.33

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

The depression had a fairly well-defined vegetation border.

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 ¹	Loc2		
0-3	10YR 4 / 3	100					Sandy loam	
3-12	10YR 5 / 4	100					Sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 Mucky Mineral (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)		

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

Restrictive Layer (if observed):
 Type: N/A
 Depth (inches): N/A

Hydric soil present? Yes No

Remarks:
The sandy soil were moderately well-drained.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 10, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-B-19-wet
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.724564 Long: -77.495193 Datum: NAD-1983
 Soil Map Unit Name: Kempsville-Bourne fine sandy loam, 2 to 7 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: **Wetland 14 is a swale in a large, primarily pine, forest. The soils are saturated and the area is dominated by wetland plants. Field Sheet 22-WTL-14-wet**

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe) Yes <u>X</u> No <u> </u> Depth (inches): <u>Surface</u>	

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

Remarks: **Saturated at surface. Ponding in some areas but not at this data point.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-19-wet**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Pinus taeda	30	Y	FAC
2				
3				
4				
5				
6				
7				

30 = Total Cover
 50% of total cover: **15** 20% of total cover: **6**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Ilex decidua	20	Y	FACW
2				
3				
4				
5				
6				
7				
8				
9				

20 = Total Cover
 50% of total cover: **10** 20% of total cover: **4**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Clethra alnifolia	10	Y	FAC
2	Smilax rotundifolia	2	N	FAC
3				
4				
5				
6				
7				
8				
9				
10				
11				

12 = Total Cover
 50% of total cover: **6** 20% of total cover: **2.4**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **3** (A)

Total Number of Dominant Species Across all Strata: **3** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **100.00%** (A/B)

Prevalence Index worksheet

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> 42 </u>	x 3 = <u> 126 </u>
FACU species <u> 0 </u>	x 4 = <u> 0 </u>
UPL species <u> 0 </u>	x 5 = <u> 0 </u>
Column totals <u> 62 </u>	(A) <u> 166 </u> (B)

Prevalence Index = B/A = **2.68**

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)
Vegetation is primarily absent in the herbaceous layer.

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 ¹	Loc2		
0-6	10YR 3 / 1	100					Silt loam	
6-12	10YR 6 / 1	100					Sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> 2 cm Mucky Mineral (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)		

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

Restrictive Layer (if observed):
 Type: N/A
 Depth (inches): N/A

Hydric soil present? Yes X No _____

Remarks:
Soils are saturated to the surface.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-B-19-wet

Project/Site: DC2RVA-Segment 22

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	3	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	2	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	3	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	2	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	3	

Total Score 15

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-B-19-wet PFO vegetation; surface water.



05-WTL-B-19-wet PFO vegetation; saturated soils.



05-WTL-B-19-wet PFO vegetation.



05-WTL-B-19-wet PFO vegetation.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 10, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-B-19-upl
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.724579 Long: -77.495098 Datum: NAD-1983
 Soil Map Unit Name: Kempsville-Bourne fine sandy loam, 2 to 7 percent slopes NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	

Remarks: **The upland point for wetland 14 was 2-foot higher than the wetland boundary. It is moderately well-drained. Field Sheet 22-WTL-14-upl**

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Upland point was 2-foot higher than adjacent wetlands.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-19-upl**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Acer rubrum	40	Y	FAC
2	Liquidambar styraciflua	10	N	FAC
3				
4				
5				
6				
7				

50 = Total Cover
 50% of total cover: **25** 20% of total cover: **10**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Liquidambar styraciflua	30	N	FAC
2	Smilax rotundifolia	30	Y	FAC
3	Clethra alnifolia	20	Y	FAC
4	Frangula caroliniana	10	N	FAC
5				
6				
7				
8				
9				
10				
11				

90 = Total Cover
 50% of total cover: **45** 20% of total cover: **18**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Smilax rotundifolia	10	Y	FAC
2				
3				
4				
5				

10 = Total Cover
 50% of total cover: **5** 20% of total cover: **2**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index worksheet

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>150</u>	x 3 = <u>450</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>450</u> (B)

Prevalence Index = B/A = 3.00

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)
Vegetation is primarily absent in the herbaceous layer.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 10, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 05-WTL-B-20-wet
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.723396 Long: -77.494106 Datum: NAD-1983
 Soil Map Unit Name: Norfolk fine sandy loam, 2 to 7 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: **Wetland 15 is a bottomland hardwood wetland swale in a pine forest. There is a ponded area connected to a linear ditch. Field Sheet 22-WTL-15-wet**

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>Up to 3"</u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>Surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	--

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

Remarks: **Wetland 15 is ponded water (surface water) with a connected linear ditch.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-20-wet**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Acer rubrum	100	Y	FAC
2				
3				
4				
5				
6				
7				

100 = Total Cover
 50% of total cover: **50** 20% of total cover: **20**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Ilex decidua	10	Y	FACW
2				
3				
4				
5				
6				
7				
8				
9				

10 = Total Cover
 50% of total cover: **5** 20% of total cover: **2**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Smilax rotundifolia	20	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

20 = Total Cover
 50% of total cover: **10** 20% of total cover: **4**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **3** (A)

Total Number of Dominant Species Across all Strata: **3** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **100.00%** (A/B)

Prevalence Index worksheet

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> 120 </u>	x 3 = <u> 360 </u>
FACU species <u> 0 </u>	x 4 = <u> 0 </u>
UPL species <u> 0 </u>	x 5 = <u> 0 </u>
Column totals <u> 130 </u>	(A) <u> 380 </u> (B)

Prevalence Index = B/A = **2.92**

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Primarily unvegetated forest floor.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 05-WTL-B-20-wet

Project/Site: DC2RVA-Segment 22

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	2	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	3	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	2	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	3	

Total Score 14

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



05-WTL-B-20-wet PFO vegetation.



05-WTL-B-20-wet PFO vegetation; surface water.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 5 City/County: Ashland/Hanover Sampling Date: June 10, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point 05-WTL-B-20-upl
 Investigator(s): L. Eggering & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): ridge Local relief (concave, convex, none): convex Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.723311 Long: -77.494117 Datum: NAD-1983
 Soil Map Unit Name: Norfolk fine sandy loam, 2 to 7 percent slopes NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	

Remarks: **The upland point near Wetland 15 is 18 inches higher than the wetland point and moderately well-drained.**
Field Sheet 22-A-WTL-15-upl

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		___ 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)		___ FAC-Neutral Test (D5)

Field Observations:		Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Surface water present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Water table present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe)	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Upland point associated with Wetland 15 is an opening in surrounding pine woods with some Red Maple. Soils are moist but not saturated.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **05-WTL-B-20-upl**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Acer rubrum	30	Y	FAC
2	Pinus taeda	30	Y	FAC
3				
4				
5				
6				
7				

60 = Total Cover
 50% of total cover: **30** 20% of total cover: **12**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Ilex decidua	20	Y	FACW
2	Frangula caroliniana	5	Y	FAC
3				
4				
5				
6				
7				
8				
9				

25 = Total Cover
 50% of total cover: **12.5** 20% of total cover: **5**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **4** (A)

Total Number of Dominant Species Across all Strata: **4** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **100.00%** (A/B)

Prevalence Index worksheet

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> 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> 85 </u>	(A) <u> 235 </u> (B)

Prevalence Index = B/A = **2.76**

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Thick layer of pine needles present on forest floor with virtually no herbaceous layer.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Henrico County Sampling Date: March 7, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-01-wet
 Investigator(s): D. Mitchell & L. Eggering Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.675237 Long: -77.503815 Datum: NAD-1983
 Soil Map Unit Name: Colfax fine sandy loam, indurated substratum, 0 to 6 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Bottomland hardwood floodplain area surrounding adjacent Stream 1. Good for flood storage & water quality. Fair for wildlife habitat. Just south of I-295. Wetland has series of old braid channels associated with Stream 1. Field Sheet: 14-A-Wetland-1 Wetdp1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>6</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>6</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Hydrology present due to lower areas adjacent to stream. Beaver activity observed.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-01-wet**

Tree Stratum (Plot Size: <u>30' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	Pinus taeda	30	Y	FAC
2	Acer rubrum	30	Y	FAC
3	Liquidambar styraciflua	10	N	FAC
4				
5				
6				
7				

70 = Total Cover
 50% of total cover: **35** 20% of total cover: **14**

Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	Clethra alnifolia	30	Y	FAC
2	Pinus taeda	10	Y	FAC
3	Liquidambar styraciflua	10	Y	FAC
4				
5				
6				
7				
8				
9				

50 = Total Cover
 50% of total cover: **25** 20% of total cover: **10**

Herb Stratum (Plot Size: <u>5' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	Juncus effusus	10	Y	FACW
2	Carex spp.	5	Y	
3	Smilax spp.	5	Y	
4				
5				
6				
7				
8				
9				
10				
11				

20 = Total Cover
 50% of total cover: **10** 20% of total cover: **4**

Woody Vine Stratum (Plot Size: <u>15' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: 8 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 75.00% (A/B)

Prevalence Index worksheet

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>120</u>	x 3 =	<u>360</u>
FACU species <u>0</u>	x 4 =	<u>0</u>
UPL species <u>0</u>	x 5 =	<u>0</u>
Column totals <u>130</u>	(A)	<u>380</u> (B)

Prevalence Index = B/A = 2.92

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

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 ¹	Loc2		
0-8	10YR 3 / 2	100					sandy clay	
8-12+	10YR 3 / 1	100					sandy clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 Mucky Mineral (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 checked="" 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)		

³Indicators 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:

Soils reduced with no mottles. Oxidized root channels are present.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-01-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	3	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	3	

Total Score 12

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-01-wet

Photo description.



06-WTL-01-wet

Photo description.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Henrico County Sampling Date: March 7, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-01-upl
 Investigator(s): L. Eggering & D. Mitchell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 4%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.675439 Long: -77.503945 Datum: NAD-1983
 Soil Map Unit Name: Colfax fine sandy loam, indurated substratum, 0 to 6 percent slopes NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> X </u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u> X </u> Wetland Hydrology Present? Yes <u> </u> No <u> X </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> X </u>
Remarks: Upland data point. Field Sheet: 14-A-WTL-up dp1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u> X </u>
---	---

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

Remarks: **North of wetland data point. Area on higher ground with a lack of wetland hydrology.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-01-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>
2	<u>Pinus taeda</u>	<u>35</u>	<u>Y</u>	<u>FAC</u>
3	<u>Acer rubrum</u>	<u>15</u>	<u>N</u>	<u>FAC</u>
4	<u>Quercus nigra</u>	<u>8</u>	<u>N</u>	<u>FAC</u>
5				
6				
7				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

98 = Total Cover

50% of total cover: 49 20% of total cover: 19.6

Prevalence Index worksheet

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>133</u>	x 3 = <u>399</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>133</u>	(A) <u>399</u> (B)

Prevalence Index = B/A = 3.00

Sapling/Shrub Stratum (Plot Size: 15' radius)

1	<u>Acer rubrum</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
2	<u>Liquidambar styraciflua</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				
8				
9				

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

35 = Total Cover

50% of total cover: 17.5 20% of total cover: 7

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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Herb Stratum (Plot Size: 5' radius)

1	<u>none</u>			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

Woody Vine Stratum (Plot Size: 30' radius)

1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Hydrophytic Vegetation Present? Yes No

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

This is in an area that is 3 feet higher than the adjacent wetland.

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 ¹	Loc2		
0-2	10YR 3 / 3	100					loam	lots of organics
2-12+	10YR 4 / 2	100					sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 Mucky Mineral (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)		

³Indicators 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 **X**

Remarks:

Drier soils that are loose with lots of organics.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Henrico County Sampling Date: March 8, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-02-wet
 Investigator(s): D. Mitchell & L. Eggering Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.660833 Long: -77.505699 Datum: NAD-1983
 Soil Map Unit Name: Kinston and Mantachie soils NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No _____ (If no, explain in Remarks.)
 Are vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "normal circumstances" present? Yes X No _____
 Are vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	

Remarks: **Low functional value due to small size. Adjacent to Stream 2 (March).**
Field Sheet: 14-A-WTL-1 wetdp1.

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	_____ Surface Soil Cracks (B6)
<u>X</u> Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ True Aquatic Plants (B14)	_____ Drainage Patterns (B10)
<u>X</u> High Water Table (A2)	_____ Moss Trim Lines (B16)
_____ Hydrogen Sulfide Odor (C1)	_____ Dry-Season Water Table (C2)
<u>X</u> Saturation (A3)	_____ 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)	

Field Observations:	Wetland Hydrology Present? Yes <u>X</u> No _____
Surface water present? Yes <u>X</u> No _____ Depth (inches): <u><4 inches</u>	
Water table present? Yes <u>X</u> No _____ Depth (inches): <u>surface</u>	
Saturation present? (includes capillary fringe) Yes <u>X</u> No _____ Depth (inches): <u>surface</u>	

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

Remarks: **Area located at bottom of slope between neighborhood homes and railroad water collects in this low spot and at times of heavy precipitation would flow into Stream 4 adjacent to the south of this wetland.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-02-wet**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Betula nigra</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>
2				
3				
4				
5				
6				
7				

20 = Total Cover
 50% of total cover: 10 20% of total cover: 4

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				

30 = Total Cover
 50% of total cover: 15 20% of total cover: 6

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>
2	<u>Ligustrum japonicum</u>	<u>5</u>	<u>Y</u>	<u>UPL</u>
3				
4				
5				
6				
7				
8				
9				
10				
11				

10 = Total Cover
 50% of total cover: 5 20% of total cover: 2

Woody Vine Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 75.00% (A/B)

Prevalence Index worksheet

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>35</u>	x 3 = <u>105</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>5</u>	x 5 = <u>25</u>
Column totals <u>60</u>	(A) <u>170</u> (B)

Prevalence Index = B/A = 2.83

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Vegetation not diverse & typical of this area and condition.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-02-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	0	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	3	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	0	

Total Score 5

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-02-wet

Photo description.



06-WTL-02-wet

Photo description.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Henrico County Sampling Date: March 8, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-02-upl
 Investigator(s): L. Eggering & D. Mitchell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 5%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.661128 Long: -77.503945 Datum: NAD-1983
 Soil Map Unit Name: Colfax fine sandy loam, indurated substratum, 0 to 6 percent slopes NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u> X </u> Hydric Soil Present? Yes <u> </u> No <u> X </u> Wetland Hydrology Present? Yes <u> </u> No <u> X </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> X </u>
Remarks: Upland data point is well drained. Field Sheet: 14-A-WTL-1 updp1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u> X </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Slope area between rail and wetland.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-02-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Juniperus virginiana</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>
2	<u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				

50 = Total Cover
 50% of total cover: 25 20% of total cover: 10

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Juniperus virginiana</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
2				
3				
4				
5				
6				
7				
8				
9				

10 = Total Cover
 50% of total cover: 5 20% of total cover: 2

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>20</u>		<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

20 = Total Cover
 50% of total cover: 10 20% of total cover: 4

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 33.33% (A/B)

Prevalence Index worksheet

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>0</u>	x 5 = <u>0</u>
Column totals <u>80</u>	(A) <u>290</u> (B)

Prevalence Index = B/A = 3.63

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

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 ¹	Loc2		
0-12+	10YR 4 / 2	100					sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 Mucky Mineral (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)		

³Indicators 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 X

Remarks:

No mottles, less clay & water than wetland area.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Henrico County Sampling Date: March 8, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-03-wet
 Investigator(s): D. Mitchell & L. Eggering Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.657811 Long: -77.50612 Datum: NAD-1983
 Soil Map Unit Name: Kinston and Mantachie soils NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Wetland 2 drains into Stream 4, that flows to Stream 3. Function is fair for flood storage and water quality, but poor for wildlife. Not much variation and relatively small. Field Sheet: 14-A-WTL-2 wet dp 1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>1-2</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Hydrology contributed from runoff from surrounding neighborhood. Rail acts like a dam and wetland flows north to Stream 4.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-03-wet**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Salix nigra</u>	<u>20</u>	<u>Y</u>	<u>OBL</u>
2	<u>Liquidambar styraciflua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
3	<u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
4				
5				
6				
7				

50 = Total Cover
 50% of total cover: 25 20% of total cover: 10

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				

15 = Total Cover
 50% of total cover: 7.5 20% of total cover: 3

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Poa spp.</u>	<u>5</u>	<u>Y</u>	
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

5 = Total Cover
 50% of total cover: 2.5 20% of total cover: 1

Woody Vine Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Campsis radicans</u>	<u>2</u>		<u>FAC</u>
2				
3				
4				
5				

2 = Total Cover
 50% of total cover: 1 20% of total cover: 0.4

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 80.00% (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>20</u>	x 1 = <u>20</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>47</u>	x 3 = <u>141</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>67</u>	(A) <u>161</u> (B)

Prevalence Index = B/A = 2.40

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-03-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 6

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-03-wet Typical habitat in wetland.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Henrico County Sampling Date: March 8, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-03-upl
 Investigator(s): L. Eggering & D. Mitchell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 12%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.657771 Long: -77.506193 Datum: NAD-1983
 Soil Map Unit Name: Kinston and Mantachie soils NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Upland area between wetland & rail. Field Sheet: 14-A-WTL-2 up dp1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **No hydrology. Upland is on a small terrace before rail ballast.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-03-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
2	<u>Liquidambar styraciflua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
3	<u>Pinus taeda</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
4				
5				
6				
7				

55 = Total Cover
 50% of total cover: 27.5 20% of total cover: 11

Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2	<u>Lonicera japonica</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				
8				
9				

15 = Total Cover
 50% of total cover: 7.5 20% of total cover: 3

Herb Stratum (Plot Size: <u>5' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

30 = Total Cover
 50% of total cover: 15 20% of total cover: 6

Woody Vine Stratum (Plot Size: <u>30' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

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)

Prevalence Index worksheet

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>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>100</u>	(A) <u>300</u> (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Henrico County Sampling Date: March 7, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-04-wet
 Investigator(s): D. Mitchell & L. Eggering Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.647307 Long: -77.507722 Datum: NAD-1983
 Soil Map Unit Name: Kinston and Mantachie soils NWI classification: PEM/PSS/PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> X </u> No <u> </u> Hydric Soil Present? Yes <u> X </u> No <u> </u> Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u>
Remarks: Area fair for flood control and water quality. Poor for wildlife. Wetland adjacent to Hungry Creek. The wetland has small areas of humps that would be upland, but are too small to count out. Field Sheet: 14-A-Wetland-2 wetdp1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water table present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 4 </u> Saturation present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 4 </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> X </u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Water runoff present from adjacent areas. There is a large wetland present west of Hungry Springs Rd.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-04-wet**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>70</u>	<u>Y</u>	<u>FAC</u>
2	<u>Liquidambar styraciflua</u>	<u>15</u>	<u>N</u>	<u>FAC</u>
3				
4				
5				
6				
7				

85 = Total Cover
 50% of total cover: 42.5 20% of total cover: 17

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2	<u>Pinus taeda</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3	<u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
4				
5				
6				
7				
8				
9				

30 = Total Cover
 50% of total cover: 15 20% of total cover: 6

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>
2	<u>Poa spp.</u>	<u>2</u>	<u>Y</u>	
3				
4				
5				
6				
7				
8				
9				
10				
11				

7 = Total Cover
 50% of total cover: 3.5 20% of total cover: 1.4

Woody Vine Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

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

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

Percent of Dominant Species that are OBL, FACW, or FAC: 83.33% (A/B)

Prevalence Index worksheet

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>120</u>	x 3 = <u>360</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>360</u> (B)

Prevalence Index = B/A = 3.00

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

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 ¹	Loc2		
0-6	10YR 4 / 1	100					silty clay	lots of organics
6-12+	10YR 6 / 1	85	7.5YR 6 / 8	15			clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> 2 cm Mucky Mineral (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)		

³Indicators 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:

Soils reduced with no mottles. Oxidized root channels are present.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-04-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 5

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-04-wet

Photo description.



06-WTL-04-wet

Photo description.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Henrico County Sampling Date: March 7, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-04-upl
 Investigator(s): L. Eggering & D. Mitchell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.646807 Long: -77.507609 Datum: NAD-1983
 Soil Map Unit Name: Colfax fine sandy loam, indurated substratum, 0 to 6 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> X </u> No <u> </u> Hydric Soil Present? Yes <u> X </u> No <u> </u> Wetland Hydrology Present? Yes <u> </u> No <u> X </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> X </u>
Remarks: Just south of wetland boundary. Field Sheet: 14-A-WTL-2 up#1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u> X </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **No hydrology present.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-04-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Pinus taeda</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>
2	<u>Juniperus virginiana</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>
3	<u>Liquidambar styraciflua</u>	<u>10</u>	<u>N</u>	<u>FAC</u>
4				
5				
6				
7				

80 = Total Cover

50% of total cover: 40

20% of total cover: 16

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				

20 = Total Cover

50% of total cover: 10

20% of total cover: 4

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
2	<u>Smilax spp.</u>	<u>5</u>	<u>Y</u>	
3				
4				
5				
6				
7				
8				
9				
10				
11				

20 = Total Cover

50% of total cover: 10

20% of total cover: 4

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Toxicodendron radicans</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>
2	<u>Vitis spp.</u>	<u>5</u>	<u>Y</u>	
3				
4				
5				

10 = Total Cover

50% of total cover: 5

20% of total cover: 2

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across all Strata: 7 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 57.14% (A/B)

Prevalence Index worksheet

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>30</u>	x 4 = <u>120</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>120</u>	(A) <u>390</u> (B)

Prevalence Index = B/A = 3.25

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 6 City/County: Henrico Sampling Date: September 14, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-05-wet
 Investigator(s): L. Postaski & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Railroad ditch Local relief (concave, convex, none): concave Slope (%): 3%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.645884 Long: -77.507483 Datum: NAD-1983
 Soil Map Unit Name: Colfax fine sandy loam, indurated substatum, 0 to 6 percent slopes NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is a narrow wetland ditch located on the east side of the railway, approximately 1,000 feet north of Hungary Road. Field Sheet 14-WTL-01-wet	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	<u>X</u> Surface Soil Cracks (B6)
<u>X</u> Surface Water (A1)	<u>X</u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Aquatic Fauna (B13)	<u> </u> Drainage Patterns (B10)
<u>X</u> High Water Table (A2)	<u> </u> Moss Trim Lines (B16)
<u> </u> Marl Deposits (B15) (LRR U)	<u> </u> Dry-Season Water Table (C2)
<u>X</u> Saturation (A3)	<u>X</u> Crayfish Burrows (C8)
<u> </u> Hydrogen Sulfide Odor (C1)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Water Marks (B1)	<u> </u> Geomorphic Position (D2)
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	<u> </u> Shallow Aquitard (D3)
<u> </u> Sediment Deposits (B2)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Presence of Reduced Iron (C4)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Drift Deposits (B3)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Algal Mat or Crust (B4)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Iron Deposits (B5)	
<u> </u> Other (Explain in Remarks)	
<u> </u> Inundation Visible on Aerial Imagery (B7)	
<u> </u> Water-Stained Leaves (B9)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>2 inches</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>Surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>Surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	---

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

Remarks: **The area is sparsely vegetated. Hydrology is evidenced by surface soil cracks.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-05-wet**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	20	Y	OBL
2	5	Y	FAC
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

25 = Total Cover
 50% of total cover: 12.5 20% of total cover: 5

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>20</u>	x 1 = <u>20</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>5</u>	x 3 = <u>15</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>25</u> (A)	<u>35</u> (B)

Prevalence Index = B/A = 1.40

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).
Areas of the wetland lacked vegetation.

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 ¹	Loc2		
0-12	10YR 5 / 1	100					Silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **With a value of 4 or more and a chroma of 2 or less, soils are depleted.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-05-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 6

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-05-wet *Typha latifolia* in wetland.



06-WTL-05-wet *Typha latifolia* in wetland.

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-05-upl**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Pinus taeda	40	Y	FAC
2 Liquidambar styraciflua	40	Y	FAC
3			
4			
5			
6			
7			
8			

80 = Total Cover
 50% of total cover: **40** 20% of total cover: **16**

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Pinus taeda	20	Y	FAC
2 Liquidambar styraciflua	10	Y	FAC
3			
4			
5			
6			
7			
8			

30 = Total Cover
 50% of total cover: **15** 20% of total cover: **6**

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Toxicodendron radicans	10	Y	
2 Smilax glauca	5	Y	FAC
3 Campsis radicans	5	Y	FAC
4			
5			

20 = Total Cover
 50% of total cover: **10** 20% of total cover: **4**

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: **7** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **85.71%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 120	x 3 = 360
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column totals 120 (A)	360 (B)

Prevalence Index = B/A = **3.00**

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).

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 ¹	Loc2		
0-12	10YR	5 / 4	100					Silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	(MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators 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 X

Remarks: **The upland core was collected proximal to the railway.**

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 6 City/County: Henrico Sampling Date: September 13, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-06-wet
 Investigator(s): L. Postaski & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Railroad ditch Local relief (concave, convex, none): concave Slope (%): 5%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.639119 Long: -77.506072 Datum: NAD-1983
 Soil Map Unit Name: Kempsville very fine sandy loam, clayey substratum, 0 to 2 percent slopes NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is a narrow wetland ditch located along the railway. Field Sheet 14-WTL-02-wet	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	<input checked="" type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input checked="" type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Surface soil cracks and sparse vegetation demonstrate hydrology within this wetland system.	

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-06-wet**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Cyperus esculentus	5	Y FAC
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

5 = Total Cover
 50% of total cover: 2.5 20% of total cover: 1

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	0 x 1 = 0
FACW species	0 x 2 = 0
FAC species	5 x 3 = 15
FACU species	0 x 4 = 0
UPL species	0 x 5 = 0
Column totals	5 (A) 15 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).
There is very little vegetation within this wetland. The soil surface is exposed. Surface soil cracks demonstrate hydrology within this wetland system.

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 ¹	Loc ²		
0-12	10YR 5 / 1	90	2.5YR 4 / 6	10	C	M	Clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric soil present? Yes No

Remarks: **With a value of 4 or more and a chroma of 2 or less, soils are depleted.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-06-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 5

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-06-wet Sparsely vegetated wetland area.



06-WTL-06-wet Wetland vegetation.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 6 City/County: Henrico Sampling Date: September 13, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-06-upl
 Investigator(s): L. Postaski & R. Magnum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.639153 Long: -77.506025 Datum: NAD-1983
 Soil Map Unit Name: Kempsville very fine sandy loam, clayey substratum, 0 to 2 percent slopes NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland?	Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>		
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>		

Remarks: **The upland point was collected approximately 30 feet east of the railway along an access road. The upland point is approximately 3 feet higher in elevation than the wetland point.**
Field Sheet 14-WTL-02-upl

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		<u> </u> Surface Soil Cracks (B6)
<u> </u> Surface Water (A1)	<u> </u> Aquatic Fauna (B13)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> High Water Table (A2)	<u> </u> Marl Deposits (B15) (LRR U)	<u> </u> Drainage Patterns (B10)
<u> </u> Saturation (A3)	<u> </u> Hydrogen Sulfide Odor (C1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Water Marks (B1)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Sediment Deposits (B2)	<u> </u> Presence of Reduced Iron (C4)	<u> </u> Crayfish Burrows (C8)
<u> </u> Drift Deposits (B3)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Thin Muck Surface (C7)	<u> </u> Geomorphic Position (D2)
<u> </u> Iron Deposits (B5)	<u> </u> Other (Explain in Remarks)	<u> </u> Shallow Aquitard (D3)
<u> </u> Inundation Visible on Aerial Imagery (B7)		<u> </u> FAC-Neutral Test (D5)
<u> </u> Water-Stained Leaves (B9)		<u> </u> Sphagnum moss (D8) (LRR T, U)

Field Observations:		Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Surface water present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Water table present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe)	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	

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

Remarks: **No hydrology present.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-06-upl**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Pinus taeda</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>
2 <u>Liquidambar styraciflua</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			

80 = Total Cover
 50% of total cover: 40 20% of total cover: 16

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Pinus taeda</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>
2 <u>Liquidambar styraciflua</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			

100 = Total Cover
 50% of total cover: 50 20% of total cover: 20

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Juniperus virginiana</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>
2 _____			
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			
9 _____			
10 _____			
11 _____			
12 _____			

30 = Total Cover
 50% of total cover: 15 20% of total cover: 6

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Smilax rotundifolia</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>
2 _____			
3 _____			
4 _____			
5 _____			

40 = Total Cover
 50% of total cover: 20 20% of total cover: 8

Dominance Test worksheet:

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

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

Percent of Dominant Species that are OBL, FACW, or FAC: 83.33% (A/B)

Prevalence Index worksheet

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>220</u>	x 3 = <u>660</u>
FACU species <u>30</u>	x 4 = <u>120</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>250</u> (A)	<u>780</u> (B)

Prevalence Index = B/A = 3.12

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).

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 ¹	Loc2		
0-12	10YR	5 / 4	100					Silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Henrico County Sampling Date: March 8, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-07-wet
 Investigator(s): D. Mitchell & L. Eggering Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): RR ditch Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.641614 Long: -77.507411 Datum: NAD-1983
 Soil Map Unit Name: Colfax fine sandy loam, indurated substratum, 0 to 6 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Low functional value. Frogs observed. Mainly a rail side ditch with areas that are wide. Wetland is between railroad & a large landscaping operation. Field Sheet: 14-A-WTL-5 wet dp1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>4-12</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Low area receiving runoff from adjacent landscape company.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-07-wet**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
2	<u>Salix nigra</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>
3	<u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
4				
5				
6				
7				

40 = Total Cover
 50% of total cover: 20 20% of total cover: 8

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				

10 = Total Cover
 50% of total cover: 5 20% of total cover: 2

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Scirpus cyperinus</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>
2	<u>Typha latifolia</u>	<u>5</u>	<u>Y</u>	<u>OBL</u>
3				
4				
5				
6				
7				
8				
9				
10				
11				

10 = Total Cover
 50% of total cover: 5 20% of total cover: 2

Woody Vine Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Campsis radicans</u>	<u>1</u>	<u>N</u>	<u>FAC</u>
2				
3				
4				
5				

1 = Total Cover
 50% of total cover: 0.5 20% of total cover: 0.2

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)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>15</u>	x 1 = <u>15</u>
FACW species <u>5</u>	x 2 = <u>10</u>
FAC species <u>41</u>	x 3 = <u>123</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>61</u>	(A) <u>148</u> (B)

Prevalence Index = B/A = 2.43

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

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 ¹	Loc2		
0-12+	10YR 2 / 1	100					silt	muck and organics

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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"/> Piedmont Floodplain Soils (F19)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 2 cm Mucky Mineral (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)	
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" 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)		

³Indicators 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:

Thick organic layer and very dark.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-07-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	0	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	0	

Total Score 3

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-07-wet Typical habitat.



06-WTL-07-wet Wetland near development.



06-WTL-07-wet Ditch portion of wetland.

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-07-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Pinus taeda</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2	<u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				

20 = Total Cover

50% of total cover: 10 20% of total cover: 4

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Juniperus virginiana</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>
2				
3				
4				
5				
6				
7				
8				
9				

5 = Total Cover

50% of total cover: 2.5 20% of total cover: 1

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Solidego spp.</u>	<u>15</u>	<u>Y</u>	
2	<u>Lonicera japonica</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3	<u>Rubus spp.</u>	<u>10</u>	<u>Y</u>	
4	<u>Andropogon virginicus</u>	<u>5</u>	<u>N</u>	<u>FACU</u>
5				
6				
7				
8				
9				
10				
11				

40 = Total Cover

50% of total cover: 20 20% of total cover: 8

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

Prevalence Index worksheet

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>10</u>	x 4 = <u>40</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>40</u>	(A) <u>130</u> (B)

Prevalence Index = B/A = 3.25

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Henrico County Sampling Date: March 8, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-08-wet
 Investigator(s): D. Mitchell & L. Eggering Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.637117 Long: -77.505488 Datum: NAD-1983
 Soil Map Unit Name: Pouncey sandy loampes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> X </u> No <u> </u> Hydric Soil Present? Yes <u> X </u> No <u> </u> Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u>
Remarks: Moderate for flood control & water quality - fair for wildlife. Functional value is higher due to relatively large size. Field Sheet: 14-A-WTL-B4 wet dp1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> X </u> No <u> </u> Depth (inches): <u>surface</u> Water table present? Yes <u> X </u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u> X </u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> X </u> No <u> </u>
--	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Bottomland hardwood wetland. Groundwater likely provides most hydrology, also receives runoff from adjacent areas.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-08-wet**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Pinus taeda</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2	<u>Liquidambar styraciflua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
3	<u>Acer rubrum</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
4				
5				
6				
7				

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: 7 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 85.71% (A/B)

70 = Total Cover

50% of total cover: 35 20% of total cover: 14

Prevalence Index worksheet

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>112</u>	x 3 = <u>336</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>117</u>	(A) <u>346</u> (B)

Prevalence Index = B/A = 2.96

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
2	<u>Liquidambar styraciflua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
3	<u>Pinus taeda</u>	<u>1</u>	<u>N</u>	<u>FAC</u>
4	<u>Clethra alnifolia</u>	<u>1</u>	<u>N</u>	<u>FAC</u>
5				
6				
7				
8				
9				

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

42 = Total Cover

50% of total cover: 21 20% of total cover: 8.4

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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Scirpus cyperinus</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>
2	<u>Carex spp.</u>	<u>2</u>	<u>Y</u>	
3				
4				
5				
6				
7				
8				
9				
10				
11				

Hydrophytic Vegetation Present? Yes No

7 = Total Cover

50% of total cover: 3.5 20% of total cover: 1.4

Woody Vine Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

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

Few herbs present. Trees are mostly mature, large maples & pines.

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 ¹	Loc2		
0-2	10YR 2 / 1	100					loam	high organics
2-10	10YR 6 / 1	100					silty clay	
10-12+	10YR 6 / 1	85	7.5YR 6 / 8	15			silty clay	faint mottles

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input checked="" 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"/> Piedmont Floodplain Soils (F19)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 2 cm Mucky Mineral (A10) (LRR N)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" 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)		

³Indicators 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:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-08-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	3	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	3	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	3	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 14

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-08-wet

Wetland habitat near stream.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Henrico County Sampling Date: March 8, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-08-upl
 Investigator(s): L. Eggering & D. Mitchell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): old railroad bed Local relief (concave, convex, none): convex Slope (%): 20
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.637299 Long: -77.505838 Datum: NAD-1983
 Soil Map Unit Name: Pouncey sandy loam NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u> X </u> Hydric Soil Present? Yes <u> </u> No <u> X </u> Wetland Hydrology Present? Yes <u> </u> No <u> X </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> X </u>
Remarks: This upland point is on an elevated area likely an old railroad bed. Field Sheet: 14-A wetland4 - upland sheet.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u> X </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Old railroad bed is well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-08-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Pinus taeda</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>
2	<u>Juniperus virginiana</u>	<u>25</u>	<u>Y</u>	<u>FACU</u>
3				
4				
5				
6				
7				

65 = Total Cover
 50% of total cover: 32.5 20% of total cover: 13

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Quercus nigra</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				

10 = Total Cover
 50% of total cover: 5 20% of total cover: 2

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Prevalence Index worksheet

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>50</u>	x 3 = <u>150</u>
FACU species <u>25</u>	x 4 = <u>100</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>75</u>	(A) <u>250</u> (B)

Prevalence Index = B/A = 3.33

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Herbaceous layer was absent.

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 ¹	Loc2		
0-12	10YR 4 / 4	100						lots of rock in sample

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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"/> Piedmont Floodplain Soils (F19)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 2 cm Mucky Mineral (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)	
<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)		

³Indicators 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 **X**

Remarks:

Soils were on old railroad bed with a lot of rock in the core sample.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Henrico County Sampling Date: March 8, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-09-wet
 Investigator(s): D. Mitchell & L. Eggering Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.634806 Long: -77.504498 Datum: NAD-1983
 Soil Map Unit Name: Colfax fine sandy loam, indurated substratum, 0 to 6 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: **Low functional value. Located south of powerline corridor and north of a rail spur.**
Field Sheet: 14-A-WTL-3 wetdp 1.

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>4-8</u>	
Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u>	
Saturation present? (includes capillary fringe) Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u>	

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

Remarks: **Wetland is in a small depressional area between the main rail, a rail spur, and a powerline corridor. It contributes water to a roadside ditch that appears to flow north.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-09-wet**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>60</u>	<u>Y</u>	<u>FAC</u>
2	<u>Liquidambar styraciflua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				

80 = Total Cover
 50% of total cover: 40 20% of total cover: 16

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				

15 = Total Cover
 50% of total cover: 7.5 20% of total cover: 3

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Smilax spp.</u>	<u>5</u>	<u>Y</u>	
2	<u>Juncus effusus</u>	<u>2</u>	<u>Y</u>	<u>FACW</u>
3				
4				
5				
6				
7				
8				
9				
10				
11				

7 = Total Cover
 50% of total cover: 3.5 20% of total cover: 1.4

Woody Vine Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 80.00% (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>2</u>	x 2 = <u>4</u>
FAC species <u>95</u>	x 3 = <u>285</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>97</u>	(A) <u>289</u> (B)

Prevalence Index = B/A = 2.98

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Little herbaceous layer.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-09-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 5

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-09-wet RR ditch portion of wetland.



06-WTL-09-wet Pond in powerline ROW near wetland.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Henrico County Sampling Date: March 8, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-09-upl
 Investigator(s): L. Eggering & D. Mitchell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 14%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.634836 Long: -77.50426 Datum: NAD-1983
 Soil Map Unit Name: Colfax fine sandy loam, indurated substratum, 0 to 6 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Upland area just south of wetland. Large pines and abundant greenbriar help delineate the hydrology. Field Sheet: 14-A-WTL-3 up dp1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-09-upl**

Tree Stratum (Plot Size: <u>30' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	Pinus taeda	25	Y	FAC
2	Liquidambar styraciflua	25	Y	FAC
3	Acer rubrum	10	N	FAC
4				
5				
6				
7				

60 = Total Cover
 50% of total cover: **30** 20% of total cover: **12**

Sapling/Shrub Stratum (Plot Size: <u>15' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	Acer rubrum	10	Y	FAC
2	Pinus taeda	5	Y	FAC
3	Juniperus virginiana	5	Y	FACU
4				
5				
6				
7				
8				
9				

20 = Total Cover
 50% of total cover: **10** 20% of total cover: **4**

Herb Stratum (Plot Size: <u>5' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	Smilax spp.	20	Y	
2	Lonicera japonica	5	Y	FAC
3				
4				
5				
6				
7				
8				
9				
10				
11				

25 = Total Cover
 50% of total cover: **12.5** 20% of total cover: **5**

Woody Vine Stratum (Plot Size: <u>30' radius</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: 7 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 71.43% (A/B)

Prevalence Index worksheet

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>5</u>	x 4 = <u>20</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>85</u> (A)	<u>260</u> (B)

Prevalence Index = B/A = 3.06

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

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 ¹	Loc2		
0-1	10YR 3 / 3	100					loam	most organics
1-12+	10YR 4 / 2	100					silty clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 Mucky Mineral (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)		

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

Restrictive Layer (if observed):

Type: gravel

Depth (inches): 6

Hydric soil present? Yes No

Remarks:

Drier soils with none of the organic material and less dense.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Henrico County Sampling Date: March 9, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-10-wet
 Investigator(s): D. Mitchell & L. Eggering Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.625042 Long: -77.500011 Datum: NAD-1983
 Soil Map Unit Name: Kinston and Mantachie soils NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Wetland extends across Stream 2. Functional value is moderate for flood storage and water quality due to location amongst industrial areas and adjacency to Stream 2. Fair for wildlife. Field Sheet: 15-A-WTL-1 wet dp1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0-4</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Wetland abuts Stream 2 on north and south side. Receives runoff from surrounding land use and is in a natural valley. The boundary is defined by a sharp contrast in topography (i.e., it ends at the hill).**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-10-wet**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>
2	<u>Acer rubrum</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				

70 = Total Cover

50% of total cover: 35

20% of total cover: 14

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				

15 = Total Cover

50% of total cover: 7.5

20% of total cover: 3

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Carex spp.</u>	<u>5</u>	<u>Y</u>	
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

5 = Total Cover

50% of total cover: 2.5

20% of total cover: 1

Woody Vine Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				

0 = Total Cover

50% of total cover: 0

20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 75.00% (A/B)

Prevalence Index worksheet

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>85</u>	x 3 = <u>255</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>85</u>	(A) <u>255</u> (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

- 1 -Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is ≤3.0¹
- 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Palustrine Forested Wetland (PFO) with little herbaceous growth, typical vegetation for the area. Loblolly pines (Pinus taeda) on fringe.

SOIL

Sampling Point: **06-WTL-10-wet**

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 ¹	Loc2		
0-12+	10YR 3 / 1	100					silty clay	muck

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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"/> Piedmont Floodplain Soils (F19)	
<input checked="" 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 type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2 cm Mucky Mineral (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" 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)		

³Indicators 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:

Mucky wet clay soil beyond 12+ inches deep. Sulfur smell is strong.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-10-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	3	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	3	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	2	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 12

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-10-wet Typical view of wetland



06-WTL-10-wet Typical view of wetland



06-WTL-10-wet View of wetland north of STR-02



06-WTL-10-wet View of wetland south of STR-02

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Henrico County Sampling Date: March 9, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-10-upl
 Investigator(s): L. Eggering & D. Mitchell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): ballast Local relief (concave, convex, none): none Slope (%): 10%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.625315 Long: -77.500068 Datum: NAD-1983
 Soil Map Unit Name: Kinston and Mantachie soils NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: This well drained upland point is near the ballast. Field Sheet: 15-A-WTL-1 up dp1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Hillside north of WTL-1 helps delineate boundary.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-10-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2	<u>Pinus taeda</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
3	<u>Acer rubrum</u>	<u>10</u>	<u>N</u>	<u>FAC</u>
4				
5				
6				
7				

55 = Total Cover
 50% of total cover: 27.5 20% of total cover: 11

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Juniperus virginiana</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>
2	<u>Quercus nigra</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>
3	<u>Ilex opaca</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>
4				
5				
6				
7				
8				
9				

15 = Total Cover
 50% of total cover: 7.5 20% of total cover: 3

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
2	<u>Smilax spp.</u>	<u>5</u>	<u>Y</u>	
3				
4				
5				
6				
7				
8				
9				
10				
11				

20 = Total Cover
 50% of total cover: 10 20% of total cover: 4

Woody Vine Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across all Strata: 7 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 57.14% (A/B)

Prevalence Index worksheet

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>75</u>	x 3 =	<u>225</u>
FACU species <u>10</u>	x 4 =	<u>40</u>
UPL species <u>0</u>	x 5 =	<u>0</u>
Column totals <u>85</u>	(A)	<u>265</u> (B)

Prevalence Index = B/A = 3.12

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

SOIL

Sampling Point: 06-WTL-10-upl

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 ¹	Loc2		
0-2	10YR 3 / 3	100					loam	lots of organics
2-12+	10YR 5 / 3	100					silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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"/> Piedmont Floodplain Soils (F19)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 2 cm Mucky Mineral (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)	
<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)		

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

Restrictive Layer (if observed):
 Type: gravel/old ballast
 Depth (inches): 6 Hydric soil present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Henrico County Sampling Date: March 9, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-11-wet
 Investigator(s): D. Mitchell & L. Eggering Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): RR ditch Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.621637 Long: -77.498257 Datum: NAD-1983
 Soil Map Unit Name: Colfax fine sandy loam, indurated substratum, 0 to 6 percent slopes NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> X </u> No <u> </u> Hydric Soil Present? Yes <u> X </u> No <u> </u> Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u>
Remarks: Railside ditch with low functionality. This wetland ditch flows north to a narrower eroded ditch that eventually flows to Stream 3. Field Sheet: 15-A-WTL-2 wet dp1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> X </u> No <u> </u> Depth (inches): <u><4 inches</u> Water table present? Yes <u> X </u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u> X </u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> X </u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Typical ditch seen along rail with adjacent upland area. The ditch is average 10-12' wide.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-11-wet**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Pinus taeda</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				

5 = Total Cover

50% of total cover: 2.5 20% of total cover: 1

Herb Stratum	(Plot Size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Scirpus cyperinus</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

5 = Total Cover

50% of total cover: 2.5 20% of total cover: 1

Woody Vine Stratum	(Plot Size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index worksheet

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>5</u> x 3 = <u>15</u>
FACU species	<u>0</u> x 4 = <u>0</u>
UPL species	<u>0</u> x 5 = <u>0</u>
Column totals	<u>10</u> (A) <u>25</u> (B)

Prevalence Index = B/A = 2.50

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Very little vegetation is present at this location within the boundary of the wetland. Small loblolly pines are found along the fringe and some grasses from the previous growing season. The adjacent upland area has mature loblolly pine and sweetgum.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-11-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	0	

Total Score 3

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-11-wet Culvert draining to wetland



06-WTL-11-wet Typical view of railroad ditch wetland



06-WTL-11-wet Railroad ditch wetland



06-WTL-11-wet Ditch perpendicular to CSX Staples Mill Station



06-WTL-11-wet Railroad ditch wetland

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-11-upl**

Tree Stratum	(Plot Size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
2	<u>Pinus taeda</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
3	<u>Quercus nigra</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
4	<u>Acer rubrum</u>	<u>10</u>	<u>N</u>	<u>FAC</u>
5	<u>Quercus alba</u>	<u>5</u>	<u>N</u>	<u>FACU</u>
6				
7				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 80.00% (A/B)

70 = Total Cover

50% of total cover: 35 20% of total cover: 14

Prevalence Index worksheet

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>75</u>	x 3 = <u>225</u>
FACU species <u>10</u>	x 4 = <u>40</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>85</u>	(A) <u>265</u> (B)

Prevalence Index = B/A = 3.12

Sapling/Shrub Stratum (Plot Size: 15' radius)

1	<u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2	<u>Ilex opaca</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>
3				
4				
5				
6				
7				
8				
9				

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

 3 - Prevalence Index is $\leq 3.0^1$

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

15 = Total Cover

50% of total cover: 7.5 20% of total cover: 3

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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Herb Stratum (Plot Size: 5' radius)

1	<u>none</u>			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

Hydrophytic Vegetation Present? Yes No

Woody Vine Stratum (Plot Size: 30' radius)

1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

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

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 ¹	Loc2		
0-5	10YR 3 / 3	100					loam	
5-12	10YR 5 / 2	100					silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 Mucky Mineral (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)		

³Indicators 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 **X** _____

Remarks:

Soils dry and crumbly.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 6 City/County: Stafford Sampling Date: August 12, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-12-wet
 Investigator(s): L. Postaski & R. Magnum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.618496 Long: -77.497992 Datum: NAD-1983
 Soil Map Unit Name: Colfax fine sandy loam, indurated substratum, 0 to 6 percent slopes NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is a narrow linear ditch along the edge of Compton Road, located behind a McDonald's restaurant. Field Sheet 15-B-WTL-01-wet	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u>X</u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u>X</u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0-2"</u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	---

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

Remarks: **Due to its small size and proximity to a roadway and commercial buildings, this is a low functioning wetland.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-12-wet**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Typha latifolia	100	Y	OBL
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

100 = Total Cover

50% of total cover: 50 20% of total cover: 20

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: _____ (B)

Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column totals _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 06-WTL-12-wet

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 ¹	Loc2		
0-12	10YR	5 / 2	100				Silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input checked="" type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **Although the soil value and chroma are indicative of a depleted matrix, there is an apparent lack of redoximorphic features, likely due to ground disturbance or having been recently deposited.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-12-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	0	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 3

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-12-wet Wetland vegetation.



06-WTL-12-wet Wetland vegetation.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 6 City/County: Stafford Sampling Date: August 12, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-12-upl
 Investigator(s): L. Postaski & R. Magnum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.618728 Long: -77.497928 Datum: NAD-1983
 Soil Map Unit Name: Colfax fine sandy loam, indurated substratum, 0 to 6 percent slopes NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: This upland is located in a mowed area located behind a McDonald's restaurant. Field Sheet 15-B-WTL-01-upl	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
--	--

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

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-12-upl**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Trifolium repens	20	Y	FACU
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

20 = Total Cover
 50% of total cover: 10 20% of total cover: 4

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index worksheet

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>20</u>	x 4 = <u>80</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>20</u> (A)	<u>80</u> (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No X

Remarks: (If observed, list morphological adaptations below).
A compact gravel layer is located directly below sparsely planted lawn grasses.

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 ¹	Loc2		
								Compact gravel layer

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	(MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

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

Restrictive Layer (if observed):
 Type: Gravel
 Depth (inches): 0-12

Hydric soil present? Yes No

Remarks: **A compact gravel layer is located directly below sparsely planted lawn grasses, not possible to get a soil core.**

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Henrico County Sampling Date: March 10, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-13-wet
 Investigator(s): D. Mitchell & L. Eggering Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): rr ditch Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.573442 Long: -77.469788 Datum: NAD-1983
 Soil Map Unit Name: Urban land NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> X </u> No <u> </u> Hydric Soil Present? Yes <u> X </u> No <u> </u> Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u>
Remarks: Railside ditch wetland south of Acca Yard. Field Sheet: 15-A-WTL-3 wet dp1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> X </u> No <u> </u> Depth (inches): <u>1-3</u> Water table present? Yes <u> X </u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u> X </u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> X </u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-13-wet**

Tree Stratum	(Plot Size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: 15' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	Typha latifolia	10	Y	OBL
2	Juncus effusus	10	Y	FACW
3				
4				
5				
6				
7				
8				
9				
10				
11				

20 = Total Cover
 50% of total cover: **10** 20% of total cover: **4**

Woody Vine Stratum	(Plot Size: 15' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: _____ (B)

Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column totals _____	(A) _____ (B) _____

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is $\leq 3.0^1$

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Only herbs.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: _____

Project/Site: _____

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	0	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 4

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



Wetland ID

Culverts in low quality RR ditch wetland.



Wetland ID

RR ditch wetland.

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-13-upl**

Tree Stratum	(Plot Size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: 15' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Woody Vine Stratum	(Plot Size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across all Strata: **0** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	0 x 1 = 0
FACW species	0 x 2 = 0
FAC species	0 x 3 = 0
FACU species	0 x 4 = 0
UPL species	0 x 5 = 0
Column totals	0 (A) 0 (B)

Prevalence Index = B/A =

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is $\leq 3.0^1$
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No **X**

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

Ballast; no vegetation.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 17, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-14-wet
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.38888 Long: -77.453396 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Depressional wetland with no outlet. Water gets ponded for long periods of time. Surface water present throughout. Wetland likely flows into Proctors Creek. Field Sheet: 17-B-WTL-18, wet.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0-5</u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are inundated. Surface water present throughout. Frog egg masses observed.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-14-wet**

Tree Stratum	(Plot Size: <u>30' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Pinus taeda</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>
2	<u>Liquidambar styraciflua</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				

90 = Total Cover

50% of total cover: 45

20% of total cover: 18

Sapling/Shrub Stratum	(Plot Size: <u>15' diameter</u>)	15		
1	<u>Salix nigra</u>	<u>30</u>	<u>Y</u>	<u>OBL</u>
2	<u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3	<u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
4				
5				
6				
7				
8				
9				

50 = Total Cover

50% of total cover: 25

20% of total cover: 10

Herb Stratum	(Plot Size: <u>5' diameter</u>)			
1	<u>Smilax rotundifolia</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2	<u>Scirpus cyperinus</u>	<u>25</u>	<u>Y</u>	<u>FACW</u>
3	<u>Typha latifolia</u>	<u>15</u>	<u>Y</u>	<u>OBL</u>
4				
5				
6				
7				
8				
9				
10				
11				

70 = Total Cover

50% of total cover: 35

20% of total cover: 14

Woody Vine Stratum	(Plot Size: <u>15' diameter</u>)			
1	<u>Lonicera japonica</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				

15 = Total Cover

50% of total cover: 7.5

20% of total cover: 3

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 9 (A)

Total Number of Dominant Species Across all Strata: 9 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index worksheet

	Total % Cover of:		Multiply by:	
OBL species	<u>45</u>	x 1 =	<u>45</u>	
FACW species	<u>25</u>	x 2 =	<u>50</u>	
FAC species	<u>155</u>	x 3 =	<u>465</u>	
FACU species	<u>0</u>	x 4 =	<u>0</u>	
UPL species	<u>0</u>	x 5 =	<u>0</u>	
Column totals	<u>225</u>	(A)	<u>560</u>	(B)

Prevalence Index = B/A = 2.49

Hydrophytic Vegetation Indicators:

- 1 -Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is ≤3.0¹
- 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-14-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 7

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-14-wet Typical view of wetland



06-WTL-14-wet Typical view of wetland



06-WTL-14-wet Typical view of wetland



06-WTL-14-wet Wetland soil core



06-WTL-14-wet View of adjacent upland



06-WTL-14-wet Upland soil core

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 17, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-14-upl
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 10%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.389015 Long: -77.453303 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Data point taken on slight hill slope above WTL-18. Soils are well drained. No wetland hydrology. Field Sheet: 17-B-WTL-18, up.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-14-upl**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Quercus palustris	30	Y	FACW
2	Liquidambar styraciflua	30	Y	FAC
3	Quercus falcata	30	Y	FACU
4		10	N	
5				
6				
7				

100 = Total Cover

50% of total cover: **50** 20% of total cover: **20**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Quercus falcata	10	Y	FACU
2	Juniperus virginiana	10	Y	FACU
3	Liquidambar styraciflua	10	Y	FAC
4	Pinus taeda	10	Y	FAC
5				
6				
7				
8				
9				

40 = Total Cover

50% of total cover: **20** 20% of total cover: **8**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Andropogon virginicus	20	Y	FACU
2	Pinus taeda	10	Y	FAC
3				
4				
5				
6				
7				
8				
9				
10				
11				

30 = Total Cover

50% of total cover: **15** 20% of total cover: **6**

Woody Vine Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: **9** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **55.56%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u> 0 </u>	x 1 = <u> 0 </u>
FACW species <u> 30 </u>	x 2 = <u> 60 </u>
FAC species <u> 60 </u>	x 3 = <u> 180 </u>
FACU species <u> 70 </u>	x 4 = <u> 280 </u>
UPL species <u> 0 </u>	x 5 = <u> 0 </u>
Column totals <u> 160 </u>	(A) <u> 520 </u> (B)

Prevalence Index = B/A = **3.25**

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 17, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-15-wet
 Investigator(s): J. Budnik & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.388528 Long: -77.454363 Datum: NAD-1983
 Soil Map Unit Name: Ochrepts and Udults, strongly sloping NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u> No <u> </u>	

Remarks: **Wetland is located within powerline corridor. Surface/ponded water is present throughout - up to 18" in some locations. Soils are inundated. Wetland drains into 18-B-STR-03. Soils disturbed by recent earth moving activities within powerline ROW.**
 Field Sheet: **18-B-WTL-02, wet.**

HYDROLOGY

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

Field Observations:		Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface water present?	Yes <u>X</u> No <u> </u> Depth (inches): <u>12</u>	
Water table present?	Yes <u>X</u> No <u> </u> Depth (inches): <u>3</u>	
Saturation present? (includes capillary fringe)	Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Surface water up to 18" in some locations. Algae is present where there is standing water.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-15-wet**

Tree Stratum	(Plot Size: <u>30' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
6				
7				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum	(Plot Size: <u>15' diameter</u>)	15		
1	<u>Pinus taeda</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				

15 = Total Cover
 50% of total cover: 7.5 20% of total cover: 3

Herb Stratum	(Plot Size: <u>5' diameter</u>)			
1	<u>Juncus effusus</u>	<u>60</u>	<u>Y</u>	<u>FACW</u>
2	<u>Carex spp.</u>	<u>15</u>	<u>N</u>	
3	<u>Scirpus cyperinus</u>	<u>10</u>	<u>N</u>	<u>FACW</u>
4				
5				
6				
7				
8				
9				
10				
11				

85 = Total Cover
 50% of total cover: 42.5 20% of total cover: 17

Woody Vine Stratum	(Plot Size: <u>15' diameter</u>)			
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:	
OBL species	<u>0</u> x 1 =	<u>0</u>
FACW species	<u>70</u> x 2 =	<u>140</u>
FAC species	<u>15</u> x 3 =	<u>45</u>
FACU species	<u>0</u> x 4 =	<u>0</u>
UPL species	<u>0</u> x 5 =	<u>0</u>
Column totals	<u>85</u> (A)	<u>185</u> (B)

Prevalence Index = B/A = 2.18

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-15-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 4

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-15-wet Area adjacent tracks (left) where STR-03 enters wetland



06-WTL-15-wet Typical view of wetland



06-WTL-15-wet Typical view of wetland



06-WTL-15-wet Wetland soil core



06-WTL-15-wet Typical view of adjacent upland



06-WTL-15-wet Upland soil core

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-15-upl**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Quercus alba	30	Y	FACU
2	Prunus spp.	30	Y	
3	Platanus occidentalis	10	N	FACW
4	Acer rubrum	10	N	FAC
5				
6				
7				

80 = Total Cover
 50% of total cover: **40** 20% of total cover: **16**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Juniperus virginiana	30	Y	FACU
2				
3				
4				
5				
6				
7				
8				
9				

30 = Total Cover
 50% of total cover: **15** 20% of total cover: **6**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Lonicera japonica	30	Y	FAC
2	Smilax rotundifolia	10	Y	FAC
3				
4				
5				
6				
7				
8				
9				
10				
11				

40 = Total Cover
 50% of total cover: **20** 20% of total cover: **8**

Woody Vine Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 40.00% (A/B)

Prevalence Index worksheet

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>50</u>	x 3 = <u>150</u>
FACU species <u>60</u>	x 4 = <u>240</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>120</u>	(A) <u>410</u> (B)

Prevalence Index = B/A = 3.42

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 17, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-16-wet
 Investigator(s): J. Budnik & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.387056 Long: -77.454363 Datum: NAD-1983
 Soil Map Unit Name: Ochrepts and Udults, strongly sloping NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil X, or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u> No <u> </u>	

Remarks: **Wetland flows into 18-B-STR-03. Area is disturbed due to railroad access road activities. Some siltation and gravel present. Majority of wetland has standing water 1-3".**
 Field Sheet: **18-B-WTL-03, wet.**

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		___ Surface Soil Cracks (B6)
<u>X</u> Surface Water (A1)	___ True Aquatic Plants (B14)	___ Sparsely Vegetated Concave Surface (B8)
___ High Water Table (A2)	___ Hydrogen Sulfide Odor (C1)	___ Drainage Patterns (B10)
<u>X</u> Saturation (A3)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Moss Trim Lines (B16)
___ Water Marks (B1)	<u>X</u> 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)		___ FAC-Neutral Test (D5)

Field Observations:		Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface water present?	Yes <u>X</u> No <u> </u> Depth (inches): <u>3</u>	
Water table present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe)	Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are saturated, some surface water present.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-16-wet**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Pinus taeda	10	Y	FAC
2				
3				
4				
5				
6				
7				

10 = Total Cover

50% of total cover: **5** 20% of total cover: **2**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Pinus taeda	20	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				

20 = Total Cover

50% of total cover: **10** 20% of total cover: **4**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Leersia oryzoides	30	Y	OBL
2	Carex spp.	20	Y	
3				
4				
5				
6				
7				
8				
9				
10				
11				

50 = Total Cover

50% of total cover: **25** 20% of total cover: **10**

Woody Vine Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **3** (A)

Total Number of Dominant Species Across all Strata: **4** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **75.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:	
OBL species 30	x 1 =	30
FACW species 0	x 2 =	0
FAC species 30	x 3 =	90
FACU species 0	x 4 =	0
UPL species 0	x 5 =	0
Column totals 60	(A)	120 (B)

Prevalence Index = B/A = **2.00**

Hydrophytic Vegetation Indicators:

- 1 -Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is ≤3.0¹
- 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present?

Yes **X** No

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

Narrow leaf cattail present in other parts of wetland.

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 ¹	Loc2		
0-7	5Y 4 / 1	100					silt loam	
7-12	5Y 5 / 1	90	5YR 5 / 8	10			sandy clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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"/> Piedmont Floodplain Soils (F19)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 2 cm Mucky Mineral (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)	
<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)		

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

Restrictive Layer (if observed):
 Type: gravel
 Depth (inches): 12"

Hydric soil present? Yes X No _____

Remarks:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-16-wet

Project/Site: DC2RVA-Segment 18

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 7

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-16-wet Typical view of wetland in forest



06-WTL-16-wet Typical view of wetland along the forest edge



06-WTL-16-wet Typical view of wetland along the forest edge



06-WTL-16-wet Typical view of wetland adjacent the railroad



06-WTL-16-wet Wetland soil core



06-WTL-16-wet Upland soil core

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-16-upl**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Pinus taeda	70	Y	FAC
2	Liquidambar styraciflua	15	N	FAC
3				
4				
5				
6				
7				

85 = Total Cover
 50% of total cover: **42.5** 20% of total cover: **17**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Juniperus virginiana	20	Y	FACU
2	Quercus falcata	10	Y	FACU
3				
4				
5				
6				
7				
8				
9				

30 = Total Cover
 50% of total cover: **15** 20% of total cover: **6**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Smilax rotundifolia	15	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

15 = Total Cover
 50% of total cover: **7.5** 20% of total cover: **3**

Woody Vine Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **2** (A)

Total Number of Dominant Species Across all Strata: **4** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **50.00%** (A/B)

Prevalence Index worksheet

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> 30 </u>	x 4 = <u> 120 </u>
UPL species <u> 0 </u>	x 5 = <u> 0 </u>
Column totals <u> 130 </u>	(A) <u> 420 </u> (B)

Prevalence Index = B/A = **3.23**

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No **X**

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

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 17, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-17-wet
 Investigator(s): J. Budnik & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.381986 Long: -77.454362 Datum: NAD-1983
 Soil Map Unit Name: Ochrepts and Udults, strongly sloping NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> X </u> No <u> </u> Hydric Soil Present? Yes <u> X </u> No <u> </u> Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u>
Remarks: This is a wetland ditch along the railroad ballast. Continues out of study area toward Centralia Road. Narrowleaf cattail and <i>Carex spp.</i> are dominant. Standing water throughout wetland - up to 20" deep. Field Sheet: 18-B-WTL-04, wet.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> X </u> No <u> </u> Depth (inches): <u>16</u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> X </u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> X </u> No <u> </u>
--	---

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

Remarks: **Surface water throughout wetland.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-17-wet**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Typha angustifolia	60	Y	OBL
2	Carex spp.	10	N	
3	Juncus effusus	10	N	FACW
4	Eleocharis palustris	10	N	OBL
5				
6				
7				
8				
9				
10				
11				

90 = Total Cover

50% of total cover: **45** 20% of total cover: **18**

Woody Vine Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: _____ (B)

Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column totals _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is $\leq 3.0^1$

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-17-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 7

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-17-wet Typical view of wetland in forest



06-WTL-17-wet Typical view of wetland in forest



06-WTL-17-wet Typical view of wetland along railroad



06-WTL-17-wet Typical view of wetland along railroad



06-WTL-17-wet Culvert 55



06-WTL-17-wet Wetland soil core

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 17, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-17-upl
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 40%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.381986 Long: -77.454362 Datum: NAD-1983
 Soil Map Unit Name: Ochrepts and Udults, strongly sloping NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland?	Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>		
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>		

Remarks: **Data point taken 30" west of wetland data point. Taken on hillslope adjacent to wetland. Soil core was not able to be taken due to heavy rock on bank for stabilization. Area appears to be well drained.**
 Field Sheet: **18-B-WTL-04, up.**

HYDROLOGY

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

Field Observations:		Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Surface water present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Water table present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe)	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Area appears to be well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-17-upl**

Tree Stratum	(Plot Size: <u>30' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Juniperus virginiana</u>	<u>25</u>	<u>Y</u>	<u>FACU</u>
2	<u>Pinus taeda</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				

45 = Total Cover
 50% of total cover: 22.5 20% of total cover: 9

Sapling/Shrub Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Herb Stratum	(Plot Size: <u>5' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lamium amplexicaule</u>	<u>40</u>	<u>Y</u>	
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

40 = Total Cover
 50% of total cover: 20 20% of total cover: 8

Woody Vine Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 33.33% (A/B)

Prevalence Index worksheet

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>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>45</u>	(A) <u>160</u> (B)

Prevalence Index = B/A = 3.56

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

SOIL

Sampling Point: 06-WTL-17-upl

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 ¹	Loc2		
								none

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 Mucky Mineral (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)		

³Indicators 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 **X** _____

Remarks:

No soil core available due to heavy rock on hillslope. Area is developed.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (city) Sampling Date: March 21, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-01-wet
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.500702 Long: -77.479943 Datum: NAD-1983
 Soil Map Unit Name: Urban land NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil X, or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u>X</u> No <u> </u>	

Remarks: **Isolated depressional wetland that begins a railroad ditch at base of ballast. Wetland receives drainage from railroad ditch and adjacent undeveloped areas within the powerline corridor, *Juncus effusus* is the dominant vegetation species. Soils are disturbed due to adjacent industrial areas and powerline ROW, however the area is functioning as a wetland.**
 Field Sheet: **18-A-WTL-01, wet.**

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>1-5</u>	
Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe) Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Surface water is present throughout wetland (1-5").**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-01-wet**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	15
1	none	
2		
3		
4		
5		
6		
7		
8		
9		

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' diameter)
1	Juncus effusus
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	

85 = Total Cover

50% of total cover: **42.5** 20% of total cover: **17**

Woody Vine Stratum	(Plot Size: 15' diameter)
1	none
2	
3	
4	
5	

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: _____ (B)

Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column totals _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is $\leq 3.0^1$

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Beyond fence (separating parking lots from powerline corridor) there is woolgrass and narrow-leaf cattail.

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 ¹	Loc2		
0-3	7.5YR 5 / 8	100					loam	rocky
3-8	10YR 5 / 4	80	10YR 6 / 8	20			loam	rocky
8-12	7.5YR 5 / 8	100					loam	rocky

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 Mucky Mineral (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)		

³Indicators 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 **X** _____

Remarks:

Soils are disturbed from adjacent industrial areas and powerline ROW but they are being reduced.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-A-01-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	0	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	0	

Total Score 2

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-A-01-wet View of isolated wetland



06-WTL-A-01-wet East corner of wetland

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (city) Sampling Date: March 21, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-01-upl
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 10%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.500712 Long: -77.427324 Datum: NAD-1983
 Soil Map Unit Name: Urban land NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil X, or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Data point taken within powerline ROW. Soils have been disturbed due to adjacent industrial areas and powerline ROW construction. Soils are well drained. Field Sheet: 18-A-WTL-01, up.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
--	--

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

Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-01-upl**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Aster spp.	4	Y	
2	Andropogon virginicus	2	Y	FACU
3				
4				
5				
6				
7				
8				
9				
10				
11				

6 = Total Cover
 50% of total cover: **3** 20% of total cover: **1.2**

Woody Vine Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across all Strata: **2** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **0.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	0 x 1 = 0
FACW species	0 x 2 = 0
FAC species	0 x 3 = 0
FACU species	2 x 4 = 8
UPL species	0 x 5 = 0
Column totals	2 (A) 8 (B)

Prevalence Index = B/A = **4.00**

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Upland point is highly denuded from powerline ROW activities (~90% is not vegetated).

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (city) Sampling Date: March 22, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-02-wet
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.472153 Long: -77.457702 Datum: NAD-1983
 Soil Map Unit Name: Dunbar fine sandy loam, 0 to 4 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Forested wetland that runs along railroad ballast to-of-slope. Hydrology comes from hillside seep along Warwick Road. Red maple is the most dominant vegetation species. Field Sheet: 18-A-WTL-03, wet.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>6</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Surface water is present near base of hill slopes. Soils are saturated throughout wetland. Some buttressed trees.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-02-wet**

Tree Stratum	(Plot Size: <u>30' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>65</u>	<u>Y</u>	<u>FAC</u>
2	<u>Liquidambar styraciflua</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
3	<u>Pinus taeda</u>	<u>20</u>	<u>N</u>	<u>FAC</u>
4				
5				
6				
7				

115 = Total Cover

50% of total cover: 57.5

20% of total cover: 23

Sapling/Shrub Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
2	<u>Acer rubrum</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				
8				
9				

30 = Total Cover

50% of total cover: 15

20% of total cover: 6

Herb Stratum	(Plot Size: <u>5' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>45</u>	<u>Y</u>	<u>FAC</u>
2	<u>Smilax rotundifolia</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
3	<u>Juncus effusus</u>	<u>15</u>	<u>N</u>	<u>FACW</u>
4				
5				
6				
7				
8				
9				
10				
11				

80 = Total Cover

50% of total cover: 40

20% of total cover: 16

Woody Vine Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				

25 = Total Cover

50% of total cover: 12.5

20% of total cover: 5

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across all Strata: 7 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index worksheet

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>235</u>	x 3 = <u>705</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>250</u>	(A) <u>735</u> (B)

Prevalence Index = B/A = 2.94

Hydrophytic Vegetation Indicators:

- 1 -Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is ≤3.0¹
- 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-A-02-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 7

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-A-02-wet

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (city) Sampling Date: March 21, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-02-upl
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 45%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.471972 Long: -77.457606 Datum: NAD-1983
 Soil Map Unit Name: Dunbar fine sandy loam, 0 to 4 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology X significantly disturbed? Yes Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Data point taken on a hillslope to Warwick Road overpass. Soils are well drained. Soils are fill materials. Field Sheet: 18-A-WTL-03, up.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Soils are well-drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-02-upl**

Tree Stratum	(Plot Size: <u>30' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Pinus taeda</u>	<u>60</u>	<u>Y</u>	<u>FAC</u>
2	<u>Liquidambar styraciflua</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				

90 = Total Cover
 50% of total cover: 45 20% of total cover: 18

Sapling/Shrub Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Carpinus caroliniana</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				

10 = Total Cover
 50% of total cover: 5 20% of total cover: 2

Herb Stratum	(Plot Size: <u>5' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Rubus spp.</u>	<u>40</u>	<u>Y</u>	
2	<u>Lonicera japonica</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				
8				
9				
10				
11				

50 = Total Cover
 50% of total cover: 25 20% of total cover: 10

Woody Vine Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>4</u>		<u>FAC</u>
2				
3				
4				
5				

4 = Total Cover
 50% of total cover: 2 20% of total cover: 0.8

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 80.00% (A/B)

Prevalence Index worksheet

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>114</u>	x 3 = <u>342</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>114</u>	(A) <u>342</u> (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Upland plot on the toe of Warwick Road overpass approach. Area very well drained but north facing on 45 degree slope.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (city) Sampling Date: March 22, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-03-wet
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.472565 Long: -77.457035 Datum: NAD-1983
 Soil Map Unit Name: Roanoke silt loam, 0 to 2 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Forested wetland that abuts the toe of slope for railroad ballast. Drainage comes from ditch outside of shady area. Wetland drains toward 18-A-cul-16, that goes under Warwick Road. Field Sheet: 18-A-WTL-02, wet.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>5</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>2</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Surface water is present throughout wetland. Buttressed trees and water stained leaves.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-03-wet**

Tree Stratum (Plot Size: <u>30' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2	<u>Quercus phellos</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
3	<u>Pinus taeda</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>
4	<u>Liquidambar styraciflua</u>	<u>15</u>	<u>N</u>	<u>FAC</u>
5				
6				
7				
		<u>100</u> = Total Cover		
50% of total cover: <u>50</u>		20% of total cover: <u>20</u>		

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)

Sapling/Shrub Stratum (Plot Size: <u>15' diameter</u>) 15		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
6				
7				
8				
9				
		<u>0</u> = Total Cover		
50% of total cover: <u>0</u>		20% of total cover: <u>0</u>		

Prevalence Index worksheet

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>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>155</u>	(A) <u>450</u> (B)

Prevalence Index = B/A = 2.90

Herb Stratum (Plot Size: <u>5' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Smilax rotundifolia</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2	<u>Juncus effusus</u>	<u>15</u>	<u>Y</u>	<u>FACW</u>
3	<u>Pinus taeda</u>	<u>10</u>	<u>N</u>	<u>FAC</u>
4				
5				
6				
7				
8				
9				
10				
11				
		<u>55</u> = Total Cover		
50% of total cover: <u>27.5</u>		20% of total cover: <u>11</u>		

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Woody Vine Stratum (Plot Size: <u>15' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
		<u>0</u> = Total Cover		
50% of total cover: <u>0</u>		20% of total cover: <u>0</u>		

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 (1m) tall.

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

Woody vines - 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.)

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-A-03-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 8

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-A-03-wet Culvert 16 under Warwick Road drains wetland



06-WTL-A-03-wet Typical view of wetland looking north



06-WTL-A-03-wet View of sample location in wetland



06-WTL-A-03-wet Typical view of wetland



06-WTL-A-03-wet View of adjacent upland

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-03-upl**

Tree Stratum (Plot Size: 30' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Pinus taeda	60	Y	FAC
2	Quercus falcata	40	Y	FACU
3	Quercus alba	10	N	FACU
4				
5				
6				
7				
		110 = Total Cover		
50% of total cover: 55		20% of total cover: 22		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 33.33% (A/B)

Sapling/Shrub Stratum (Plot Size: 15' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Juniperus virginiana	10	Y	FACU
2				
3				
4				
5				
6				
7				
8				
9				
		10 = Total Cover		
50% of total cover: 5		20% of total cover: 2		

Prevalence Index worksheet

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>60</u>	x 3 = <u>180</u>
FACU species <u>60</u>	x 4 = <u>240</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>120</u>	(A) <u>420</u> (B)

Prevalence Index = B/A = 3.50

Herb Stratum (Plot Size: 5' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
		0 = Total Cover		
50% of total cover: 0		20% of total cover: 0		

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Woody Vine Stratum (Plot Size: 15' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
		0 = Total Cover		
50% of total cover: 0		20% of total cover: 0		

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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

Well drained terrace has upland species and no herbaceous layer.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (city) Sampling Date: March 22, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-04-wet
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.470672 Long: -77.456568 Datum: NAD-1983
 Soil Map Unit Name: Dunbar fine sandy loam, 0 to 4 percent slopes NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Depressional wetland along railroad ballast. Red maple saplings are the dominant vegetation. Wetland is an old cutover. Most trees are multistem saplings out of stumps. Culvert under railroad contributes to hydrology. Field Sheet: 18-A-WTL-04, wet.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>12</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	--

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

Remarks: **Some surface water pools in wetland, but not at data point. Soil inundated. 24" culvert (Cul-18) under railroad contributes to hydrology.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-04-wet**

Tree Stratum (Plot Size: <u>30' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	Acer rubrum	15	Y	FAC
2				
3				
4				
5				
6				
7				
		15 = Total Cover		
50% of total cover: 7.5		20% of total cover: 3		

Sapling/Shrub Stratum (Plot Size: <u>15' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	Acer rubrum	70	Y	FAC
2	Pinus taeda	10	N	FAC
3	Forestiera acuminata	5	N	OBL
4				
5				
6				
7				
8				
9				
		85 = Total Cover		
50% of total cover: 42.5		20% of total cover: 17		

Herb Stratum (Plot Size: <u>5' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	Juncus effusus	30	Y	FACW
2	Lonicera japonica	10	Y	FAC
3				
4				
5				
6				
7				
8				
9				
10				
11				
		40 = Total Cover		
50% of total cover: 20		20% of total cover: 8		

Woody Vine Stratum (Plot Size: <u>15' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	Lonicera japonica	15	Y	FAC
2				
3				
4				
5				
		15 = Total Cover		
50% of total cover: 7.5		20% of total cover: 3		

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)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>5</u>	x 1 = <u>5</u>
FACW species <u>30</u>	x 2 = <u>60</u>
FAC species <u>120</u>	x 3 = <u>360</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>155</u>	(A) <u>425</u> (B)

Prevalence Index = B/A = 2.74

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-A-04-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 8

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-A-04-wet View of wetland cutover



06-WTL-A-04-wet View of wetland cutover

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (city) Sampling Date: March 21, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-04-upl
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 30%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.470694 Long: -77.45647 Datum: NAD-1983
 Soil Map Unit Name: Dunbar fine sandy loam, 0 to 4 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil X, or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Data point taken at toe of slope of railroad ballast. Soils are well drained. Tulip poplar is dominant tree species. Soils disturbed from creation of railroad. Field Sheet: 18-A-WTL-04, up.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Soils are well-drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-04-upl**

Tree Stratum (Plot Size: <u>30' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liriodendron tulipifera</u>	<u>70</u>	<u>Y</u>	<u>FACU</u>
2	<u>Acer rubrum</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				

90 = Total Cover
 50% of total cover: 45 20% of total cover: 18

Sapling/Shrub Stratum (Plot Size: <u>15' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>
2	<u>Pinus taeda</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				
8				
9				

50 = Total Cover
 50% of total cover: 25 20% of total cover: 10

Herb Stratum (Plot Size: <u>5' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>
2	<u>Rubus spp.</u>	<u>10</u>	<u>Y</u>	
3				
4				
5				
6				
7				
8				
9				
10				
11				

50 = Total Cover
 50% of total cover: 25 20% of total cover: 10

Woody Vine Stratum (Plot Size: <u>15' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				

40 = Total Cover
 50% of total cover: 20 20% of total cover: 8

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: 7 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 71.43% (A/B)

Prevalence Index worksheet

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>150</u>	x 3 = <u>450</u>
FACU species <u>70</u>	x 4 = <u>280</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>220</u> (A)	<u>730</u> (B)

Prevalence Index = B/A = 3.32

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (city) Sampling Date: March 22, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-05-wet
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.467375 Long: -77.454289 Datum: NAD-1983
 Soil Map Unit Name: Roanoke-Chewacla complex, 0 to 2 percent slopes, frequently flooded NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Forested wetland near the toe of slope for railroad. Wetland is within the floodplain for 18-A-STR-08 (Grindall Creek). Wetland is on north side of creek. Field Sheet: 18-A-WTL-05, wet.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>10</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Some surface water pools are present in wetland, but not at this data point. Soils are inundated.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-05-wet**

Tree Stratum	(Plot Size: <u>30' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>60</u>	<u>Y</u>	<u>FAC</u>
2	<u>Liquidambar styraciflua</u>	<u>15</u>	<u>N</u>	<u>FAC</u>
3	<u>Platanus occidentalis</u>	<u>15</u>	<u>N</u>	<u>FACW</u>
4				
5				
6				
7				

90 = Total Cover

50% of total cover: 45

20% of total cover: 18

Sapling/Shrub Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2	<u>Forestiera acuminata</u>	<u>30</u>	<u>Y</u>	<u>OBL</u>
3	<u>Liquidambar styraciflua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
4				
5				
6				
7				
8				
9				

80 = Total Cover

50% of total cover: 40

20% of total cover: 16

Herb Stratum	(Plot Size: <u>5' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Juncus effusus</u>	<u>15</u>	<u>Y</u>	<u>FACW</u>
2	<u>Smilax rotundifolia</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
3	<u>Leersia virginica</u>	<u>15</u>	<u>Y</u>	<u>FACW</u>
4	<u>Lonicera japonica</u>	<u>10</u>	<u>N</u>	<u>FAC</u>
5				
6				
7				
8				
9				
10				
11				

55 = Total Cover

50% of total cover: 27.5

20% of total cover: 11

Woody Vine Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
2	<u>Toxicodendron radicans</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				

25 = Total Cover

50% of total cover: 12.5

20% of total cover: 5

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 9 (A)

Total Number of Dominant Species Across all Strata: 9 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:	
OBL species <u>30</u>	x 1 =	<u>30</u>
FACW species <u>45</u>	x 2 =	<u>90</u>
FAC species <u>175</u>	x 3 =	<u>525</u>
FACU species <u>0</u>	x 4 =	<u>0</u>
UPL species <u>0</u>	x 5 =	<u>0</u>
Column totals <u>250</u>	(A)	<u>645</u> (B)

Prevalence Index = B/A = 2.58

Hydrophytic Vegetation Indicators:

- 1 -Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is ≤3.0¹
- 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-A-05-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	3	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	3	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	3	

Total Score 11

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-A-05-wet Portion of wetland NE of Grindall Creek.



06-WTL-A-05-wet Inundation in wetland.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (city) Sampling Date: March 21, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-05-upl
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 20%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.467398 Long: -77.454253 Datum: NAD-1983
 Soil Map Unit Name: Roanoke-Chewacla complex, 0 to 2 percent slopes, frequently flooded NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil X, or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	

Remarks: **Data point taken on hillslope up to railroad. Soils are well drained. Soils disturbed by construction of railroad.**
 Field Sheet: **18-A-WTL-05, up.**

HYDROLOGY

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

Field Observations:	
Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe) Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are well-drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-05-upl**

Tree Stratum	(Plot Size: <u>30' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Pinus taeda</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2	<u>Liriodendron tulipifera</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>
3	<u>Acer rubrum</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
4				
5				
6				
7				

75 = Total Cover

50% of total cover: 37.5 20% of total cover: 15

Sapling/Shrub Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Carpinus caroliniana</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				

10 = Total Cover

50% of total cover: 5 20% of total cover: 2

Herb Stratum	(Plot Size: <u>5' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

30 = Total Cover

50% of total cover: 15 20% of total cover: 6

Woody Vine Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				

10 = Total Cover

50% of total cover: 5 20% of total cover: 2

Dominance Test worksheet:

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

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

Percent of Dominant Species that are OBL, FACW, or FAC: 83.33% (A/B)

Prevalence Index worksheet

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>95</u>	x 3 = <u>285</u>
FACU species <u>30</u>	x 4 = <u>120</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>125</u>	(A) <u>405</u> (B)

Prevalence Index = B/A = 3.24

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

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 ¹	Loc2		
0-5	10YR 3 / 2	100					loam	
5-12	10YR 5 / 8	80	10YR 5 / 3	20			clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 Mucky Mineral (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)		

³Indicators 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 **X**

Remarks:

Soils disturbed by a construction of railroad.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (city) Sampling Date: March 22, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-06-wet
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.46661 Long: -77.453842 Datum: NAD-1983
 Soil Map Unit Name: Roanoke-Chewacla complex, 0 to 2 percent slopes, frequently flooded NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> X </u> No <u> </u> Hydric Soil Present? Yes <u> X </u> No <u> </u> Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u>
Remarks: Forest wetland in floodplain of Grindall Creek. Data point taken on south side of creek. Surface water present at data point. There is a hillside seep enters swamp area along south boundary. Field Sheet: 18-A-WTL-05 DP2, wet. 2	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
<u> X </u> Surface Water (A1)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> X </u> High Water Table (A2)	<u> </u> Drainage Patterns (B10)
<u> X </u> Saturation (A3)	<u> </u> Moss Trim Lines (B16)
<u> </u> Water Marks (B1)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Sediment Deposits (B2)	<u> </u> Crayfish Burrows (C8)
<u> </u> Drift Deposits (B3)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Stunted or Stressed Plants (D1)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> X </u> Water-Stained Leaves (B9)	<u> </u> Microtopographic Relief (D4)
<u> </u> Aquatic Fauna (B13)	<u> </u> FAC-Neutral Test (D5)
Field Observations: Surface water present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 3 </u> Water table present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 1 </u> Saturation present? Yes <u> X </u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> X </u> No <u> </u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: Surface water present at data point. Soils are inundated.	

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-06-wet**

Tree Stratum (Plot Size: <u>30' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>
2	<u>Liquidambar styraciflua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
3	<u>Fraxinus pennsylvanica</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>
4	<u>Betula nigra</u>	<u>15</u>	<u>N</u>	<u>FACW</u>
5	<u>Pinus taeda</u>	<u>15</u>	<u>N</u>	<u>FAC</u>
6				
7				
		<u>110</u> = Total Cover		
50% of total cover: <u>55</u>		20% of total cover: <u>22</u>		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across all Strata: 8 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 87.50% (A/B)

Sapling/Shrub Stratum (Plot Size: <u>15' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
2	<u>Lindera benzoin</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				
8				
9				
		<u>35</u> = Total Cover		
50% of total cover: <u>17.5</u>		20% of total cover: <u>7</u>		

Prevalence Index worksheet

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>125</u>	x 3 = <u>375</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>170</u>	(A) <u>465</u> (B)

Prevalence Index = B/A = 2.74

Herb Stratum (Plot Size: <u>5' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Juncus effusus</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>
2	<u>Sagittaria spp.</u>	<u>10</u>	<u>Y</u>	
3				
4				
5				
6				
7				
8				
9				
10				
11				
		<u>20</u> = Total Cover		
50% of total cover: <u>10</u>		20% of total cover: <u>4</u>		

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is $\leq 3.0^1$

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Woody Vine Stratum (Plot Size: <u>15' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
		<u>15</u> = Total Cover		
50% of total cover: <u>7.5</u>		20% of total cover: <u>3</u>		

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 (1m) tall.

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

Woody vines - 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.)

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 ¹	Loc2		
0-3	10YR 3 / 1	100					loam	
3-12	10YR 4 / 1	100					sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input checked="" 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"/> Piedmont Floodplain Soils (F19)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 2 cm Mucky Mineral (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)	
<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)		

³Indicators 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:

Soils are mucky.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-A-06-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	3	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	3	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	2	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	3	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	3	

Total Score 15

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-A-06-wet Wetland 5 SE of Grindall Creek.



06-WTL-A-06-wet Inundation in SE portion of wetland.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (city) Sampling Date: March 21, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-06-upl
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 20%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.467398 Long: -77.454253 Datum: NAD-1983
 Soil Map Unit Name: Roanoke-Chewacla complex, 0 to 2 percent slopes, frequently flooded NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil X, or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	

Remarks: **Data point taken on hillslope up to railroad. Soils are well drained. Soils disturbed by construction of railroad. Field Sheet: 18-A-WTL-05, up. The same upland point was used for both 06-WTL-A-05 and 06-WTL-A-06.**

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are well-drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-06-upl**

Tree Stratum (Plot Size: <u>30' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Pinus taeda</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2	<u>Liriodendron tulipifera</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>
3	<u>Acer rubrum</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
4				
5				
6				
7				

75 = Total Cover
 50% of total cover: 37.5 20% of total cover: 15

Sapling/Shrub Stratum (Plot Size: <u>15' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Carpinus caroliniana</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				

10 = Total Cover
 50% of total cover: 5 20% of total cover: 2

Herb Stratum (Plot Size: <u>5' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

30 = Total Cover
 50% of total cover: 15 20% of total cover: 6

Woody Vine Stratum (Plot Size: <u>15' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				

10 = Total Cover
 50% of total cover: 5 20% of total cover: 2

Dominance Test worksheet:

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

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

Percent of Dominant Species that are OBL, FACW, or FAC: 83.33% (A/B)

Prevalence Index worksheet

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>95</u>	x 3 = <u>285</u>
FACU species <u>30</u>	x 4 = <u>120</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>125</u>	(A) <u>405</u> (B)

Prevalence Index = B/A = 3.24

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

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 ¹	Loc2		
0-5	10YR 3 / 2	100					loam	
5-12	10YR 5 / 8	80	10YR 5 / 3	20			clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 Mucky Mineral (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)		

³Indicators 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 X

Remarks:

Soils disturbed by a construction of railroad.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (city) Sampling Date: March 22, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-07-wet
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.462158 Long: -77.450651 Datum: NAD-1983
 Soil Map Unit Name: Edgehill-Urban land complex, 6 to 12 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> X </u> No <u> </u> Hydric Soil Present? Yes <u> X </u> No <u> </u> Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u>
Remarks: Primarily a wetland ditch with a wetland fringe that goes out into a forested area. Surface water present throughout ditch. Soils are inundated. Field Sheet: 18-A-WTL-06, wet.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> X </u> No <u> </u> Depth (inches): <u>3-6</u> Water table present? Yes <u> X </u> No <u> </u> Depth (inches): <u>15</u> Saturation present? Yes <u> X </u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> X </u> No <u> </u>
---	---

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

Remarks: **Surface water present.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-07-wet**

Tree Stratum (Plot Size: 30' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Pinus taeda	30	Y	FAC
2	Liquidambar styraciflua	20	Y	FAC
3	Acer rubrum	20	Y	FAC
4	Betula nigra	15	N	FACW
5				
6				
7				

85 = Total Cover
 50% of total cover: **42.5** 20% of total cover: **17**

Sapling/Shrub Stratum (Plot Size: 15' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Acer rubrum	20	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				

20 = Total Cover
 50% of total cover: **10** 20% of total cover: **4**

Herb Stratum (Plot Size: 5' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Juncus effusus	50	Y	FACW
2	Smilax rotundifolia	10	N	FAC
3	Pinus taeda	10	N	FAC
4				
5				
6				
7				
8				
9				
10				
11				

70 = Total Cover
 50% of total cover: **35** 20% of total cover: **14**

Woody Vine Stratum (Plot Size: 15' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

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)

Prevalence Index worksheet

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> 110 </u>	x 3 =	<u> 330 </u>
FACU species <u> 0 </u>	x 4 =	<u> 0 </u>
UPL species <u> 0 </u>	x 5 =	<u> 0 </u>
Column totals <u> 175 </u>	(A)	<u> 460 </u> (B)

Prevalence Index = B/A = **2.63**

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Algae is present in surface water pools.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-A-07-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 10

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-A-07-wet Typical habitat in ditch wetland.



06-WTL-A-07-wet Trash and debris in wetland.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (city) Sampling Date: March 21, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-07-upl
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 10%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.462183 Long: -77.450548 Datum: NAD-1983
 Soil Map Unit Name: Edgehill-Urban land complex, 6 to 12 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil X, or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Data point taken on a slight hillslope above WTL-6, wetland and ballast. Soils are well drained. Fescue is dominant vegetation species. Soils are disturbed by railroad. Field Sheet: 18-A-WTL-06, up.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
---	---

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

Remarks: **Soils are well-drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-07-upl**

Tree Stratum	(Plot Size: <u>30' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Pinus taeda</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				

30 = Total Cover
 50% of total cover: 15 20% of total cover: 6

Sapling/Shrub Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Juniperus virginiana</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
2				
3				
4				
5				
6				
7				
8				
9				

10 = Total Cover
 50% of total cover: 5 20% of total cover: 2

Herb Stratum	(Plot Size: <u>5' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Schedonorus arundinaceus</u>	<u>70</u>	<u>Y</u>	<u>FACU</u>
2	<u>Dichanthelium spp.</u>	<u>10</u>	<u>N</u>	
3	<u>Pinus taeda</u>	<u>5</u>	<u>N</u>	<u>FAC</u>
4				
5				
6				
7				
8				
9				
10				
11				

85 = Total Cover
 50% of total cover: 42.5 20% of total cover: 17

Woody Vine Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				

25 = Total Cover
 50% of total cover: 12.5 20% of total cover: 5

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

Prevalence Index worksheet

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>60</u>	x 3 = <u>180</u>
FACU species <u>80</u>	x 4 = <u>320</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>140</u>	(A) <u>500</u> (B)

Prevalence Index = B/A = 3.57

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

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 ¹	Loc2		
0-12							sand	gritty/dark/black

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 Mucky Mineral (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)		

³Indicators 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 **X** _____

Remarks:

Soils are disturbed by railroad. Soil is dark/black. Soils are well drained.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 23, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-08-wet
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.462643 Long: -77.450151 Datum: NAD-1983
 Soil Map Unit Name: Edgehill-Urban land complex, 6 to 12 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u> No <u> </u>	

Remarks: **This is primarily a PFO depressional swale with a smaller railroad ditch wetland component that has some herbaceous plants. Both the railroad ditch and the PFO swale continue north out of the study area.**
Field Sheet: 18AWTL-7, wet.

HYDROLOGY

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

Field Observations:		Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface water present?	Yes <u>X</u> No <u> </u> Depth (inches): <u>2</u>	
Water table present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe)	Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **The depression and the railroad ditch are inundated. The wetland margins are saturated.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-08-wet**

Tree Stratum (Plot Size: <u>30' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>
2	<u>Liquidambar styraciflua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
3	<u>Pinus taeda</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
4				
5				
6				
7				
		<u>80</u> = Total Cover		
50% of total cover: <u>40</u>		20% of total cover: <u>16</u>		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Sapling/Shrub Stratum (Plot Size: <u>15' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lindera benzoin</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2	<u>Clethra alnifolia</u>	<u>1</u>	<u>N</u>	<u>FAC</u>
3				
4				
5				
6				
7				
8				
9				
		<u>31</u> = Total Cover		
50% of total cover: <u>15.5</u>		20% of total cover: <u>6.2</u>		

Prevalence Index worksheet

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>111</u>	x 3 =	<u>333</u>
FACU species <u>0</u>	x 4 =	<u>0</u>
UPL species <u>0</u>	x 5 =	<u>0</u>
Column totals <u>111</u>	(A)	<u>333</u> (B)

Prevalence Index = B/A = 3.00

Herb Stratum (Plot Size: <u>5' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
		<u>0</u> = Total Cover		
50% of total cover: <u>0</u>		20% of total cover: <u>0</u>		

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Woody Vine Stratum (Plot Size: <u>15' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
		<u>0</u> = Total Cover		
50% of total cover: <u>0</u>		20% of total cover: <u>0</u>		

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 (1m) tall.

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

Woody vines - 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.)

Loblolly pines are growing on elevated humps near sample point. Herbaceous layer is absent in swale. In the railroad ditch Murdannia is beginning to grow along with several species of Carex. Juncus effusus is beginning to green up.

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 ¹	Loc2		
0-1	10YR 3 / 1	100					sandy loam	lots of organic matter
1-12	2.5Y 5 / 1	98	10YR 5 / 4	2			sandy clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> 2 cm Mucky Mineral (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)		

³Indicators 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:

Soils are strongly reduced in the swale portion of the wetland. Soils in the railroad ditch portion have a lot of rock from ballast in core samples, but are also strongly reduced.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-A-08-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 6

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-A-08-wet Typical view of wetland



06-WTL-A-08-wet Typical view of wetland

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-08-upl**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Pinus taeda	60	Y	FAC
2	Liquidambar styraciflua	20	Y	FAC
3	Acer rubrum	15	N	FAC
4				
5				
6				
7				

95 = Total Cover
 50% of total cover: **47.5** 20% of total cover: **19**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Lindera benzoin	1		FAC
2				
3				
4				
5				
6				
7				
8				
9				

1 = Total Cover
 50% of total cover: **0.5** 20% of total cover: **0.2**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Woody Vine Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **2** (A)

Total Number of Dominant Species Across all Strata: **2** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **100.00%** (A/B)

Prevalence Index worksheet

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> 96 </u>	x 3 = <u> 288 </u>
FACU species <u> 0 </u>	x 4 = <u> 0 </u>
UPL species <u> 0 </u>	x 5 = <u> 0 </u>
Column totals <u> 96 </u>	(A) <u> 288 </u> (B)

Prevalence Index = B/A = **3.00**

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Understory herbaceous layer is absent.

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 ¹	Loc2		
0-3								duff & organic matter
3-8	10YR 5 / 4	100					sandy loam	
8-12	10YR 5 / 4	95	10YR 7 / 8	5			sandy clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 Mucky Mineral (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)		

³Indicators 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 **X** _____

Remarks:

Soils are slightly reduced, but generally not hydric.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 23, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-09-wet
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.460022 Long: -77.450486 Datum: NAD-1983
 Soil Map Unit Name: Faceville-Gritney gravelly fine sandy loams, 6 to 12 percent slopes NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is a continuation at the railroad ditch wetland 6. It is generally inundated up to 6 inches. South of Walmsley Boulevard portion of Wetland 6 railroad ditch. Field Sheet: Seg 18 A WTL 6 SS, wetland.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>6</u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **This railroad ditch wetland is generally inundated up to 6 inches with the margins beign saturated. Flow appears to be from south to north at a very slow pace.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-09-wet**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Betula nigra	10	Y	FACW
2				
3				
4				
5				
6				
7				

10 = Total Cover
 50% of total cover: **5** 20% of total cover: **2**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Alnus spp.	60	Y	
2	Liquidambar styraciflua	5	N	FAC
3				
4				
5				
6				
7				
8				
9				

65 = Total Cover
 50% of total cover: **32.5** 20% of total cover: **13**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Carex spp.	40	Y	
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

40 = Total Cover
 50% of total cover: **20** 20% of total cover: **8**

Woody Vine Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: _____ (B)

Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column totals _____	(A) _____ (B) _____

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Newly emerging Carex spp. that cannot be identified to species at this point.

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 ¹	Loc2		
0-6	10YR 4 / 1						sandy loam	ver loose mucky sand
6-12	10YR 5 / 2	90	10YR 4 / 4	10			sandy clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> 2 cm Mucky Mineral (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)		

³Indicators 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:

Soils are clearly reduced in the top 6 inches.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-A-09-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	3	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 8

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-A-09-wet Ditch portion of wetland.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 23, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-09-upl
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): terrace neart ballast Local relief (concave, convex, none): none Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.46003 Long: -77.450425 Datum: NAD-1983
 Soil Map Unit Name: Faceville-Gritney gravelly fine sandy loams, 6 to 12 percent slopes NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil X, or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: This upland point near wetland 6 is very near the ballast for almost. So soils present (mainly rock). It is well drained and has upland plants. South of Walmsley Boulevard portion of wetland 6. Field Sheet: 18 A WTL 6 SS, upland, up.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Area is well drained and 2 feet higher than adjacent wetland.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-09-upl**

Tree Stratum	(Plot Size: <u>30' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
6				
7				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Herb Stratum	(Plot Size: <u>5' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>60</u>	<u>Y</u>	<u>FAC</u>
2	<u>Apocynum cannabinum</u>	<u>10</u>	<u>N</u>	<u>FACU</u>
3	<u>Pinus taeda</u>	<u>10</u>	<u>N</u>	<u>FAC</u>
4	<u>Campsis radicans</u>	<u>5</u>	<u>N</u>	<u>FAC</u>
5				
6				
7				
8				
9				
10				
11				

85 = Total Cover
 50% of total cover: 42.5 20% of total cover: 17

Woody Vine Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index worksheet

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>75</u> x 3 = <u>225</u>
FACU species	<u>10</u> x 4 = <u>40</u>
UPL species	<u>0</u> x 5 = <u>0</u>
Column totals	<u>85</u> (A) <u>265</u> (B)

Prevalence Index = B/A = 3.12

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Approximately 40% of sample plot is not vegetated, and it is disturbed by railroad maintenance traffic.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 23, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-10-wet
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.457801 Long: -77.450985 Datum: NAD-1983
 Soil Map Unit Name: Faceville-Gritney gravelly fine sandy loams, 2 to 6 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Ponded area west of CSX access road. Water depth from 2"-24". Herbaceous layer is absent. Alder and red maple are along the wetland boundary. Field Sheet: 18-A-WTL-08, wet.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>8</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>5</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are inundated.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-10-wet**

Tree Stratum	(Plot Size: <u>30' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>35</u>	<u>Y</u>	<u>FAC</u>
2	<u>Pinus taeda</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
3	<u>Acer rubrum</u>	<u>15</u>	<u>N</u>	<u>FAC</u>
4				
5				
6				
7				

80 = Total Cover
 50% of total cover: 40 20% of total cover: 16

Sapling/Shrub Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Alnus serrulata</u>	<u>35</u>	<u>Y</u>	<u>OBL</u>
2	<u>Liquidambar styraciflua</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				
8				
9				

60 = Total Cover
 50% of total cover: 30 20% of total cover: 12

Herb Stratum	(Plot Size: <u>5' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Carex spp.</u>	<u>15</u>	<u>Y</u>	
2	<u>Juncus effusus</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>
3				
4				
5				
6				
7				
8				
9				
10				
11				

25 = Total Cover
 50% of total cover: 12.5 20% of total cover: 5

Woody Vine Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

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

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

Percent of Dominant Species that are OBL, FACW, or FAC: 83.33% (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>35</u>	x 1 = <u>35</u>
FACW species <u>10</u>	x 2 = <u>20</u>
FAC species <u>105</u>	x 3 = <u>315</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>370</u> (B)

Prevalence Index = B/A = 2.47

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Loblolly pines on adjacent upland area.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-A-10-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	2	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 8

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-A-10-wet Typical view of wetland

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-10-upl**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Pinus taeda	65	Y	FAC
2				
3				
4				
5				
6				
7				

65 = Total Cover
 50% of total cover: **32.5** 20% of total cover: **13**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Pinus taeda	25	Y	FAC
2	Acer rubrum	10	Y	FAC
3				
4				
5				
6				
7				
8				
9				

35 = Total Cover
 50% of total cover: **17.5** 20% of total cover: **7**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Woody Vine Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **3** (A)

Total Number of Dominant Species Across all Strata: **3** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **100.00%** (A/B)

Prevalence Index worksheet

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> 0 </u>	x 4 = <u> 0 </u>
UPL species <u> 0 </u>	x 5 = <u> 0 </u>
Column totals <u> 100 </u>	(A) <u> 300 </u> (B)

Prevalence Index = B/A = **3.00**

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 23, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-11-wet
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.456653 Long: -77.451242 Datum: NAD-1983
 Soil Map Unit Name: Faceville-Gritney gravelly fine sandy loams, 2 to 6 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> X </u> No <u> </u> Hydric Soil Present? Yes <u> X </u> No <u> </u> Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u>
Remarks: Ponded area west of CSX access road. Area inundated east of wetland has just been cleared/cutover (Loblolly pine stumps). Area receives seep water and stormwater runoff from adjacent hillside (west of wetland). Cardwell Road is along wetland southern boundary. Sparse herbaceous layer. Field Sheet: 18-A-WTL-09, wet.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 8 </u> Water table present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 5 </u> Saturation present? Yes <u> X </u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> X </u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Surface water is ponded in wetland. Depth ranges from 2"-18".**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-11-wet**

Tree Stratum	(Plot Size: <u>30' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Pinus taeda</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>
2	<u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3	<u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
4				
5				
6				
7				

45 = Total Cover
 50% of total cover: 22.5 20% of total cover: 9

Sapling/Shrub Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Acer rubrum</u>	<u>35</u>	<u>Y</u>	<u>FAC</u>
2	<u>Pinus taeda</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				
8				
9				

50 = Total Cover
 50% of total cover: 25 20% of total cover: 10

Herb Stratum	(Plot Size: <u>5' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Ludwigia spp.</u>	<u>8</u>	<u>Y</u>	
2	<u>Juncus effusus</u>	<u>8</u>	<u>Y</u>	<u>FACW</u>
3				
4				
5				
6				
7				
8				
9				
10				
11				

16 = Total Cover
 50% of total cover: 8 20% of total cover: 3.2

Woody Vine Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: 7 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 85.71% (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>8</u>	x 2 = <u>16</u>
FAC species <u>95</u>	x 3 = <u>285</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>103</u>	(A) <u>301</u> (B)

Prevalence Index = B/A = 2.92

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Trees/shrubs along wetland boundary.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-A-11-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 10

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-A-11-wet Culvert 02, north end of wetland.



06-WTL-A-11-wet Typical view of wetland, looking north.



06-WTL-A-11-wet Typical view of wetland, cut trees.



06-WTL-A-11-wet Snapping turtle in wetland.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (city) Sampling Date: March 23, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-11-upl
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 25%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.456672 Long: -77.451364 Datum: NAD-1983
 Soil Map Unit Name: Faceville-Gritney gravelly fine sandy loams, 2 to 6 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	

Remarks: **Data point on hillslope west of wetland. Soils are well drained. Hill side has a lot of concrete debris.**
 Field Sheet: **18-A-WTL-9, up.**

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-11-upl**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Pinus taeda	80	Y	FAC
2	Liquidambar styraciflua	10	N	FAC
3				
4				
5				
6				
7				

90 = Total Cover
 50% of total cover: **45** 20% of total cover: **18**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Lonicera canadensis	60	Y	FACU
2				
3				
4				
5				
6				
7				
8				
9				

60 = Total Cover
 50% of total cover: **30** 20% of total cover: **12**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Lonicera japonica	5	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

5 = Total Cover
 50% of total cover: **2.5** 20% of total cover: **1**

Woody Vine Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Prevalence Index worksheet

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> 95 </u>	x 3 = <u> 285 </u>
FACU species <u> 60 </u>	x 4 = <u> 240 </u>
UPL species <u> 0 </u>	x 5 = <u> 0 </u>
Column totals <u> 155 </u>	(A) <u> 525 </u> (B)

Prevalence Index = B/A = 3.39

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 23, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-12-wet
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.453025 Long: -77.45174 Datum: NAD-1983
 Soil Map Unit Name: Dunbar fine sandy loam, 0 to 4 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Old railroad ditch wetland that has become forested. Surface water (2-8") is present throughout wetland. Soils likely been disturbed by previous railroad activities. Field Sheet: 18-A-WTL-10, wet.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>6</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>4</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are inundated.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-12-wet**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Acer rubrum	65	Y	FAC
2	Liquidambar styraciflua	20	Y	FAC
3				
4				
5				
6				
7				

85 = Total Cover
 50% of total cover: **42.5** 20% of total cover: **17**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Acer rubrum	40	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				

40 = Total Cover
 50% of total cover: **20** 20% of total cover: **8**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Woody Vine Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **3** (A)

Total Number of Dominant Species Across all Strata: **3** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **100.00%** (A/B)

Prevalence Index worksheet

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> 0 </u>	x 4 = <u> 0 </u>
UPL species <u> 0 </u>	x 5 = <u> 0 </u>
Column totals <u> 125 </u>	(A) <u> 375 </u> (B)

Prevalence Index = B/A = **3.00**

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Herbaceous layer nearly absent (all surface water).

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 ¹	Loc2		
0-3	10YR 2 / 2	100					silt	organics, sandy silt
3-12	10YR 2 / 1	100					silt	sandy silt

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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"/> Piedmont Floodplain Soils (F19)	
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 2 cm Mucky Mineral (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" 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)		

³Indicators 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:

Strong sulfidic odor.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-A-12-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	2	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 10

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-A-12-wet Typical view of wetland, looking NE.



06-WTL-A-12-wet View of Culvert 01 in wetland.



06-WTL-A-12-wet View of Culvert 02 under Castlewood Road at north end of wetland.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 23, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-12-upl
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 60%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.453009 Long: -77.451839 Datum: NAD-1983
 Soil Map Unit Name: Tetotum loam, clayey substratum, 2 to 6 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland?	Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>		
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>		

Remarks: **Data point on old spoil. Soils are well drained. Loblolly pine is the dominant tree species.**
Field Sheet: 18-A-WTL-10, up.

HYDROLOGY

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

Field Observations:		Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Surface water present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Water table present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe)	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-12-upl**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Pinus taeda	90	Y	FAC
2	Fagus grandifolia	25	Y	FACU
3				
4				
5				
6				
7				

115 = Total Cover
 50% of total cover: **57.5** 20% of total cover: **23**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Fagus grandifolia	15	Y	FACU
2	Acer rubrum	10	Y	FAC
3				
4				
5				
6				
7				
8				
9				

25 = Total Cover
 50% of total cover: **12.5** 20% of total cover: **5**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Smilax rotundifolia	8	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

8 = Total Cover
 50% of total cover: **4** 20% of total cover: **1.6**

Woody Vine Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **3** (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: **60.00%** (A/B)

Prevalence Index worksheet

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> 108 </u>	x 3 = <u> 324 </u>
FACU species <u> 40 </u>	x 4 = <u> 160 </u>
UPL species <u> 0 </u>	x 5 = <u> 0 </u>
Column totals <u> 148 </u>	(A) <u> 484 </u> (B)

Prevalence Index = B/A = **3.27**

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Herbaceous layer nearly absent.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 23, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-13-wet
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.451057 Long: -77.452256 Datum: NAD-1983
 Soil Map Unit Name: Tetotum loam, clayey substratum, 2 to 6 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Wetland is within floodplain of 18-A-STR-10. The area has a slight downward slope to the stream. A channel is braided through the wetland. Sweetgum and sycamore are dominant tree species. Field Sheet: 18-A-WTL-11, wet.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>2</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are inundated.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-13-wet**

Tree Stratum	(Plot Size: <u>30' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>55</u>	<u>Y</u>	<u>FAC</u>
2	<u>Platanus occidentalis</u>	<u>40</u>	<u>Y</u>	<u>FACW</u>
3				
4				
5				
6				
7				

95 = Total Cover
 50% of total cover: 47.5 20% of total cover: 19

Sapling/Shrub Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>35</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				

35 = Total Cover
 50% of total cover: 17.5 20% of total cover: 7

Herb Stratum	(Plot Size: <u>5' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Leersia virginica</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>
2	<u>Juncus effusus</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>
3				
4				
5				
6				
7				
8				
9				
10				
11				

40 = Total Cover
 50% of total cover: 20 20% of total cover: 8

Woody Vine Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
2	<u>Toxicodendron radicans</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				

25 = Total Cover
 50% of total cover: 12.5 20% of total cover: 5

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across all Strata: 7 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>80</u>	x 2 = <u>160</u>
FAC species <u>115</u>	x 3 = <u>345</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>195</u>	(A) <u>505</u> (B)

Prevalence Index = B/A = 2.59

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Herbaceous layer is fairly sparse.

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 ¹	Loc2		
0-4	2.5Y 4 / 1	100					loam	some fine sand
4-12	2.5Y 4 / 1	98	7.5Y 5 / 6	2			loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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"/> Piedmont Floodplain Soils (F19)	
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 2 cm Mucky Mineral (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)	
<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)		

³Indicators 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:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-A-13-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 6

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-A-13-wet View of wetland adjacent to STR-10.

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-13-upl**

Tree Stratum	(Plot Size: <u>30' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Pinus taeda</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2	<u>Liquidambar styraciflua</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				

60 = Total Cover
 50% of total cover: 30 20% of total cover: 12

Sapling/Shrub Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				

15 = Total Cover
 50% of total cover: 7.5 20% of total cover: 3

Herb Stratum	(Plot Size: <u>5' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

40 = Total Cover
 50% of total cover: 20 20% of total cover: 8

Woody Vine Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2	<u>Toxicodendron radicans</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				

45 = Total Cover
 50% of total cover: 22.5 20% of total cover: 9

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)

Prevalence Index worksheet

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>160</u>	x 3 = <u>480</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>480</u> (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Herbaceous layer nearly absent.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 23, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-14-wet
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.442344 Long: -77.453531 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Depressional wetland in the floodplain of 18-A-STR-12, near the Chippenham Parkway. Hydrology comes from creek overflow and seepage from adjacent hillside (railroad). Field Sheet: 18-A-WTL-12, wet.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>2</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are inundated.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-14-wet**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Acer rubrum	50	Y	FAC
2	Liriodendron tulipifera	30	Y	FACU
3				
4				
5				
6				
7				

80 = Total Cover
 50% of total cover: **40** 20% of total cover: **16**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Lindera benzoin	40	Y	FAC
2	Acer rubrum	25	Y	FAC
3	Smilax rotundifolia	15	N	FAC
4				
5				
6				
7				
8				
9				

80 = Total Cover
 50% of total cover: **40** 20% of total cover: **16**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Smilax rotundifolia	15	Y	FAC
2	Lonicera japonica	10	Y	FAC
3	Carex spp.	10	Y	
4				
5				
6				
7				
8				
9				
10				
11				

35 = Total Cover
 50% of total cover: **17.5** 20% of total cover: **7**

Woody Vine Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: 7 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 71.43% (A/B)

Prevalence Index worksheet

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>155</u>	x 3 = <u>465</u>
FACU species <u>30</u>	x 4 = <u>120</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>185</u>	(A) <u>585</u> (B)

Prevalence Index = B/A = 3.16

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Tulip poplar are rooted in upland.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-A-14-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 7

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-A-14-wet View of bamboo stand along wetland.



06-WTL-A-14-wet Typical view of wetland north of Dundas Road.

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-14-upl**

Tree Stratum	(Plot Size: <u>30' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liriodendron tulipifera</u>	<u>65</u>	<u>Y</u>	<u>FACU</u>
2	<u>Liquidambar styraciflua</u>	<u>15</u>	<u>N</u>	<u>FAC</u>
3				
4				
5				
6				
7				

80 = Total Cover
 50% of total cover: 40 20% of total cover: 16

Sapling/Shrub Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2	<u>Bambusoideae spp.</u>	<u>15</u>	<u>Y</u>	
3	<u>Ilex opaca</u>	<u>10</u>	<u>N</u>	<u>FACU</u>
4				
5				
6				
7				
8				
9				

55 = Total Cover
 50% of total cover: 27.5 20% of total cover: 11

Herb Stratum	(Plot Size: <u>5' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

25 = Total Cover
 50% of total cover: 12.5 20% of total cover: 5

Woody Vine Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>45</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				

45 = Total Cover
 50% of total cover: 22.5 20% of total cover: 9

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 60.00% (A/B)

Prevalence Index worksheet

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>75</u>	x 4 = <u>300</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>190</u> (A)	<u>645</u> (B)

Prevalence Index = B/A = 3.39

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 X 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No

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

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 ¹	Loc2		
0-2	10YR 3 / 2	100					silt loam	not saturated
2-12	10YR 5 / 4	100					loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 Mucky Mineral (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)		

³Indicators 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 **X**

Remarks:

Upland point is 2 feet higher than wetland and well drained.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 23, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-15-wet
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.441151 Long: -77.453585 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: The area includes a hillslope seep and a side channel to Stream 12. It has the requisite soils, hydrology, and plants to be considered jurisdictional. Field Sheet: 18-A-WTL-13, wet.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>up to 2</u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Area to the NW starts as hillslope seep then drains into Stream 12 side channel. The area is mapped as Wetland 13.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-15-wet**

Tree Stratum (Plot Size: 30' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Salix nigra	40	Y	OBL
2	Liriodendron tulipifera	10	N	FACU
3	Acer rubrum	10	N	FAC
4				
5				
6				
7				

60 = Total Cover
 50% of total cover: **30** 20% of total cover: **12**

Sapling/Shrub Stratum (Plot Size: 15' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Clethra alnifolia	20	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				

20 = Total Cover
 50% of total cover: **10** 20% of total cover: **4**

Herb Stratum (Plot Size: 5' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Symplocarpus foetidus	10	Y	OBL
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

10 = Total Cover
 50% of total cover: **5** 20% of total cover: **2**

Woody Vine Stratum (Plot Size: 15' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **3** (A)

Total Number of Dominant Species Across all Strata: **3** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **100.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:	
OBL species <u> 50 </u>	x 1 =	<u> 50 </u>
FACW species <u> 0 </u>	x 2 =	<u> 0 </u>
FAC species <u> 30 </u>	x 3 =	<u> 90 </u>
FACU species <u> 10 </u>	x 4 =	<u> 40 </u>
UPL species <u> 0 </u>	x 5 =	<u> 0 </u>
Column totals <u> 90 </u>	(A)	<u> 180 </u> (B)

Prevalence Index = B/A = **2.00**

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Tulip poplar rooted on raised area and overhangs sample plot. Herbaceous layer is primarily absent.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-A-15-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 4

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-A-15-wet Typical view of wetland.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 23, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-15-upl
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 40%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.441212 Long: -77.453597 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	

Remarks: **Upland data point for Wetland 13 is on the toe of fill for VA 150. It is well drained and lacks wetland vegetation.**
Field Sheet: 18-A-WTL-13, upland.

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **40% slope on VA 150 fill. Area well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-15-upl**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Liriodendron tulipifera	100	Y	FACU
2				
3				
4				
5				
6				
7				

100 = Total Cover
 50% of total cover: **50** 20% of total cover: **20**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Liquidambar styraciflua	30	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				

30 = Total Cover
 50% of total cover: **15** 20% of total cover: **6**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Lonicera japonica	60	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

60 = Total Cover
 50% of total cover: **30** 20% of total cover: **12**

Woody Vine Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Lonicera japonica	10	Y	FAC
2				
3				
4				
5				

10 = Total Cover
 50% of total cover: **5** 20% of total cover: **2**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **3** (A)

Total Number of Dominant Species Across all Strata: **4** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **75.00%** (A/B)

Prevalence Index worksheet

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> 100 </u>	x 4 = <u> 400 </u>
UPL species <u> 0 </u>	x 5 = <u> 0 </u>
Column totals <u> 200 </u>	(A) <u> 700 </u> (B)

Prevalence Index = B/A = **3.50**

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

40% of ground is without an herbaceous layer.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 24, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-16-wet
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.42833 Long: -77.454002 Datum: NAD-1983
 Soil Map Unit Name: Lenoir silt loam, 0 to 4 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u> No <u> </u>	

Remarks: **This is a small depressional BH wetland and cattail drainage swale. The area does not have surface water, but it is saturated to the surface and appears to remain so for a long duration during the growing season.**
Field Sheet: 18-A-WTL-14, wet.

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		___ Surface Soil Cracks (B6)
___ Surface Water (A1)	___ True Aquatic Plants (B14)	___ Sparsely Vegetated Concave Surface (B8)
___ High Water Table (A2)	<u>X</u> Hydrogen Sulfide Odor (C1)	<u>X</u> Drainage Patterns (B10)
<u>X</u> 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)	<u>X</u> 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)
<u>X</u> Water-Stained Leaves (B9)		___ Microtopographic Relief (D4)
___ Aquatic Fauna (B13)		___ FAC-Neutral Test (D5)

Field Observations:		Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface water present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Water table present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe)	Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Area remains saturated for a long duration during the growing season. It does pond water after storm events as evidenced by the water stained leaves.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-16-wet**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Acer rubrum	80	Y	FAC
2	Quercus phellos	10	N	FAC
3	Liquidambar styraciflua	2	N	FAC
4				
5				
6				
7				

92 = Total Cover
 50% of total cover: **46** 20% of total cover: **18.4**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Woody Vine Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Smilax rotundifolia	2		FAC
2				
3				
4				
5				

2 = Total Cover
 50% of total cover: **1** 20% of total cover: **0.4**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index worksheet

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>94</u>	x 3 = <u>282</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>94</u>	(A) <u>282</u> (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Large dead willow oak near data plot. Herb layer was absent and shrub layer was also nearly absent.

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 ¹	Loc2		
0-3	2.5Y 3 / 1	100					loam	
3-8	10YR 4 / 1	95	10YR 4 / 4	5			clay loam	
8-12	10YR 5 / 2	95	10YR 5 / 8	5			silty clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> 2 cm Mucky Mineral (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)		

³Indicators 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:

Soils have slight sulfide odor.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-A-16-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	0	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	0	

Total Score 2

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-A-16-wet Bottomland hardwood portion of wetland.



06-WTL-A-16-wet Cattail ditch portion of wetland.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 24, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-16-upl
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.42847 Long: -77.453917 Datum: NAD-1983
 Soil Map Unit Name: Lenoir silt loam, 0 to 4 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Data point taken on a terrace above wetland. Soils are well drained. Eastern red cedar is the dominant tree species. Field Sheet: 18AWTL14up, upland.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-16-upl**

Tree Stratum (Plot Size: 30' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Juniperus virginiana	80	Y	FACU
2	Quercus nigra	30	Y	FAC
3				
4				
5				
6				
7				
		110	= Total Cover	
50% of total cover: 55		20% of total cover: 22		

Sapling/Shrub Stratum (Plot Size: 15' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				
		0	= Total Cover	
50% of total cover: 0		20% of total cover: 0		

Herb Stratum (Plot Size: 5' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Schedonorus arundinaceus	50	Y	FACU
2	Hedera helix	30	Y	FACU
3				
4				
5				
6				
7				
8				
9				
10				
11				
		80	= Total Cover	
50% of total cover: 40		20% of total cover: 16		

Woody Vine Stratum (Plot Size: 15' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
		0	= Total Cover	
50% of total cover: 0		20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 25.00% (A/B)

Prevalence Index worksheet

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>160</u>	x 4 = <u>640</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>190</u>	(A) <u>730</u> (B)

Prevalence Index = B/A = 3.84

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

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 ¹	Loc2		
0-6	10YR 5 / 3	100					sandy loam	
6-12								gravel from old road

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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"/> Piedmont Floodplain Soils (F19)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 2 cm Mucky Mineral (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)	
<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)		

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

Restrictive Layer (if observed):
 Type: gravel
 Depth (inches): 6 Hydric soil present? Yes No

Remarks:
Data point on old road.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 24, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-17-wet
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.423604 Long: -77.454061 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u> No <u> </u>	

Remarks: **Depressional wetland on the west side of Dalebrook Drive. Green ash is the dominant vegetation species. Trees have buttressed trunks. Surface water is present through most of wetland (4-8"). Wetland includes a ditch for a portion of the wetland along the road.**
Field Sheet: 18-A-WTL-15, wet.

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>6</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>2</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Surface water is present throughout. Frogs and crayfish present.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-17-wet**

Tree Stratum	(Plot Size: <u>30' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Fraxinus pennsylvanica</u>	<u>85</u>	<u>Y</u>	<u>FACW</u>
2	<u>Liquidambar styraciflua</u>	<u>5</u>	<u>N</u>	<u>FAC</u>
3				
4				
5				
6				
7				

90 = Total Cover
 50% of total cover: 45 20% of total cover: 18

Sapling/Shrub Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lindera benzoin</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				

15 = Total Cover
 50% of total cover: 7.5 20% of total cover: 3

Herb Stratum	(Plot Size: <u>5' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Woody Vine Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>85</u>	x 2 = <u>170</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>230</u> (B)

Prevalence Index = B/A = 2.19

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Herbaceous layer is nearly absent. Carex spp. and iris spp. are growing in the water next to road.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-A-17-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	3	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	2	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	4	

Total Score 14

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-A-17-wet View from Dalebrook Road



06-WTL-A-17-wet Typical view of wetland



06-WTL-A-17-wet Buttressed trunks in wetland



06-WTL-A-17-wet Roots growing over stumps in wetland



06-WTL-A-17-wet Roots growing over stumps in wetland



06-WTL-A-17-wet Typical view of wetland

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 24, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-17-upl
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 5%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.423583 Long: -77.453896 Datum: NAD-1983
 Soil Map Unit Name: Made land NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Data point on hillslope between Dalebrook Drive and WTL-15. Fescue is the dominant vegetation species. Road side is maintained/mowed. Soils are well drained. Field Sheet: 18AWTL15, up.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-17-upl**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Schedonorus arundinaceus	60	Y	FACU
2	Tridens flavus	15	N	FACU
3	Allium spp.	5	N	
4				
5				
6				
7				
8				
9				
10				
11				

80 = Total Cover
 50% of total cover: **40** 20% of total cover: **16**

Woody Vine Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across all Strata: **1** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **0.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	0 x 1 = 0
FACW species	0 x 2 = 0
FAC species	0 x 3 = 0
FACU species	75 x 4 = 300
UPL species	0 x 5 = 0
Column totals	75 (A) 300 (B)

Prevalence Index = B/A = **4.00**

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Area is maintained/mowed.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 24, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-18-wet
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 19
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.420468 Long: -77.454005 Datum: NAD-1983
 Soil Map Unit Name: Coxville loam, 2 to 6 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This depressional area appears to have the requisite hydrology, plants, and soils to be considered jurisdictional. The road ditch portions are herbaceous and the remainder is PFO. Field Sheet: 18AWTL16, wet.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Hydrology is generally weak, but water-stained leaves and terrain position indicate that the area is inundated/saturated for the requisite time period in the growing season. Water only present in road ditch portion of wetland and not at this data point.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-18-wet**

Tree Stratum	(Plot Size: <u>30' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>60</u>	<u>Y</u>	<u>FAC</u>
2	<u>Fraxinus pennsylvanica</u>	<u>10</u>	<u>N</u>	<u>FACW</u>
3				
4				
5				
6				
7				

70 = Total Cover

50% of total cover: 35

20% of total cover: 14

Sapling/Shrub Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				

15 = Total Cover

50% of total cover: 7.5

20% of total cover: 3

Herb Stratum	(Plot Size: <u>5' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Carex spp.</u>	<u>20</u>	<u>Y</u>	
2	<u>Juncus effusus</u>	<u>15</u>	<u>Y</u>	<u>FACW</u>
3	<u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
4				
5				
6				
7				
8				
9				
10				
11				

45 = Total Cover

50% of total cover: 22.5

20% of total cover: 9

Woody Vine Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Smilax rotundifolia</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2	<u>Campsis radicans</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				

20 = Total Cover

50% of total cover: 10

20% of total cover: 4

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: 7 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 85.71% (A/B)

Prevalence Index worksheet

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>105</u>	x 3 =	<u>315</u>
FACU species <u>0</u>	x 4 =	<u>0</u>
UPL species <u>0</u>	x 5 =	<u>0</u>
Column totals <u>130</u>	(A)	<u>365</u> (B)

Prevalence Index = B/A = 2.81

Hydrophytic Vegetation Indicators:

- 1 -Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is ≤3.0¹
- 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

40% of sample plot is not vegetated.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-A-18-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 4

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-A-18-wet Typical view of wetland

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 24, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-18-upl
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 45%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.420338 Long: -77.453934 Datum: NAD-1983
 Soil Map Unit Name: Ochrepts and Udults, sloping NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	

Remarks: **This upland point for wetland 16 is on the roadbank of Dalebrook Road. It is very well maintained.**
Field Sheet: 18AWTL16 upland.

HYDROLOGY

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

Field Observations:		Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Surface water present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Water table present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe)	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **This road bank is very well maintained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-18-upl**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Schedonorus arundinaceus	40	Y	FACU
2	Andropogon virginicus	40	Y	FACU
3				
4				
5				
6				
7				
8				
9				
10				
11				

80 = Total Cover
 50% of total cover: **40** 20% of total cover: **16**

Woody Vine Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across all Strata: **2** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **0.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	0 x 1 = 0
FACW species	0 x 2 = 0
FAC species	0 x 3 = 0
FACU species	80 x 4 = 320
UPL species	0 x 5 = 0
Column totals	80 (A) 320 (B)

Prevalence Index = B/A = **4.00**

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Typical roadside upland plant community.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 24, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-19-wet
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.409436 Long: -77.454265 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Depressional forested wetland that receives infrequent overflow flooding from Kingsland Creek. Pepperbush present throughout wetland area. Water stained leaves present and soils are saturated to the surface. Field Sheet: 18-A-WTL-17, wet.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	---

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

Remarks: **May receive infrequent overflow flooding from Kingsland Creek. Depression area that receives drainage from hillslopes.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-19-wet**

Tree Stratum (Plot Size: <u>30' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Quercus alba</u>	<u>45</u>	<u>Y</u>	<u>FACU</u>
2	<u>Acer rubrum</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
3	<u>Liquidambar styraciflua</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
4	<u>Liriodendron tulipifera</u>	<u>15</u>	<u>N</u>	<u>FACU</u>
5				
6				
7				
		<u>120</u> = Total Cover		
50% of total cover: <u>60</u>		20% of total cover: <u>24</u>		

Dominance Test worksheet:

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

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

Percent of Dominant Species that are OBL, FACW, or FAC: 83.33% (A/B)

Sapling/Shrub Stratum (Plot Size: <u>15' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Clethra alnifolia</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2	<u>Liquidambar styraciflua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				
8				
9				
		<u>50</u> = Total Cover		
50% of total cover: <u>25</u>		20% of total cover: <u>10</u>		

Prevalence Index worksheet

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>112</u>	x 3 = <u>336</u>
FACU species <u>60</u>	x 4 = <u>240</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>172</u>	(A) <u>576</u> (B)

Prevalence Index = B/A = 3.35

Herb Stratum (Plot Size: <u>5' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Lonicera japonica</u>	<u>2</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
		<u>2</u> = Total Cover		
50% of total cover: <u>1</u>		20% of total cover: <u>0.4</u>		

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Woody Vine Stratum (Plot Size: <u>15' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				
		<u>0</u> = Total Cover		
50% of total cover: <u>0</u>		20% of total cover: <u>0</u>		

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 (1m) tall.

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

Woody vines - 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.)

Herb layer nearly absent. Tulip poplar and white oak are growing on high spots within the depression or along the margins.

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 ¹	Loc2		
0-4	7.5YR 3 / 1	100					sand	
4-12	10YR 4 / 1	100					sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input checked="" 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"/> Piedmont Floodplain Soils (F19)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 2 cm Mucky Mineral (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)	
<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)		

³Indicators 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:

Sandy soils with a lot of organic matter.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-A-19-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 6

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-A-19-wet Typical view of wetland in Kingsland Creek floodplain.



06-WTL-A-19-wet Typical view of wetland in Kingsland Creek floodplain.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 24, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-19-upl
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 10%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.4095 Long: -77.454191 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	

Remarks: **This is the upland point near the wetland 17 depression in the Kingsland Creek floodplain.**
Field Sheet: 18-A-WTL-17, up.

HYDROLOGY

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

Field Observations:	
Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Area well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-19-upl**

Tree Stratum (Plot Size: 30' diameter)		Absolute % Cover	0	Indicator Status
1	Quercus alba	80	Y	FACU
2	Liriodendron tulipifera	20	N	FACU
3	Fagus grandifolia	10	N	FACU
4				
5				
6				
7				
		110	= Total Cover	
50% of total cover: 55		20% of total cover: 22		

Sapling/Shrub Stratum (Plot Size: 15' diameter)		Absolute % Cover	0	Indicator Status
1	Clethra alnifolia	10	Y	FAC
2	Ilex opaca	7	Y	FACU
3	Juniperus virginiana	5	Y	FACU
4				
5				
6				
7				
8				
9				
		22	= Total Cover	
50% of total cover: 11		20% of total cover: 4.4		

Herb Stratum (Plot Size: 5' diameter)		Absolute % Cover	0	Indicator Status
1	Ilex opaca	2		FACU
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
		2	= Total Cover	
50% of total cover: 1		20% of total cover: 0.4		

Woody Vine Stratum (Plot Size: 15' diameter)		Absolute % Cover	0	Indicator Status
1	Smilax rotundifolia	2		FAC
2				
3				
4				
5				
		2	= Total Cover	
50% of total cover: 1		20% of total cover: 0.4		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 25.00% (A/B)

Prevalence Index worksheet

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>12</u>	x 3 = <u>36</u>
FACU species <u>124</u>	x 4 = <u>496</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>136</u>	(A) <u>532</u> (B)

Prevalence Index = B/A = 3.91

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

The upland point is 4 feet higher than adjacent wetland depression.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 24, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-20-wet
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depressional ditch Local relief (concave, convex, none): concave Slope (%): 0%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.398375 Long: -77.454156 Datum: NAD-1983
 Soil Map Unit Name: Bourne fine sandy loam, 2 to 6 percent slopes NWI classification: PFO/PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This is a very small railroad ditch wetland/depression that ponds water for a long duration. Field Sheet: 18AWTL 18 wet.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	___ Surface Soil Cracks (B6)
<u>X</u> Surface Water (A1)	___ True Aquatic Plants (B14)
___ High Water Table (A2)	___ Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u>X</u> Hydrogen Sulfide Odor (C1)
___ Water Marks (B1)	<u>X</u> Oxidized Rhizospheres on Living Roots (C3)
___ Sediment Deposits (B2)	___ Presence of Reduced Iron (C4)
___ Drift Deposits (B3)	___ Recent Iron Reduction in Tilled Soils (C6)
___ Algal Mat or Crust (B4)	___ Thin Muck Surface (C7)
___ Iron Deposits (B5)	___ Other (Explain in Remarks)
___ Inundation Visible on Aerial Imagery (B7)	___ Moss Trim Lines (B16)
<u>X</u> Water-Stained Leaves (B9)	___ Dry-Season Water Table (C2)
___ Aquatic Fauna (B13)	<u>X</u> 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)

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>4</u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **The area remains ponded for a long duration during the growing season. Buttressed tree trunks.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-20-wet**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Pinus taeda	40	Y	FAC
2				
3				
4				
5				
6				
7				

40 = Total Cover
 50% of total cover: **20** 20% of total cover: **8**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Clethra alnifolia	2	N	FAC
2				
3				
4				
5				
6				
7				
8				
9				

2 = Total Cover
 50% of total cover: **1** 20% of total cover: **0.4**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Scirpus cyperinus	60	Y	FACW
2	Echinochloa pungens	20	Y	
3				
4				
5				
6				
7				
8				
9				
10				
11				

80 = Total Cover
 50% of total cover: **40** 20% of total cover: **16**

Woody Vine Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u> 0 </u>	x 1 = <u> 0 </u>
FACW species <u> 60 </u>	x 2 = <u> 120 </u>
FAC species <u> 42 </u>	x 3 = <u> 126 </u>
FACU species <u> 0 </u>	x 4 = <u> 0 </u>
UPL species <u> 0 </u>	x 5 = <u> 0 </u>
Column totals <u> 102 </u>	(A) <u> 246 </u> (B)

Prevalence Index = B/A = 2.41

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

The loblolly pine is on adjacent uplands but overhangs the wetland. Approximately 20% of the plot does not have vegetation.

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 ¹	Loc2		
0-3	10YR 4 / 2	95	2.5Y 6 / 1	5			silt loam	
3-12	10YR 4 / 1	95	2.5Y 6 / 1	5			silty clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> 2 cm Mucky Mineral (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)		

³Indicators 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:

Soil cores were all saturated and were obviously reduced.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-A-20-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 4

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-A-20-wet Typical view of wetland



06-WTL-A-20-wet Typical view of wetland



06-WTL-A-20-wet View of woolgrass beginning to emerge in wetland.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 24, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-20-upl
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 30%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.398644 Long: -77.454138 Datum: NAD-1983
 Soil Map Unit Name: Bourne fine sandy loam, 2 to 6 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland?	Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>		
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>		

Remarks: **This is the upland point for wetland 18 railroad ditch wetland. The sample point is on a terrace next to the ballast.**
Field Sheet: 18AWTL18up, upland.

HYDROLOGY

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

Field Observations:		Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Surface water present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Water table present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe)	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Area is 3 feet above the wetland ditch and very well-drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-20-upl**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	0	Indicator Status
1	Pinus taeda	60	Y	FAC
2				
3				
4				
5				
6				
7				

60 = Total Cover
 50% of total cover: **30** 20% of total cover: **12**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	0	Indicator Status
1	Acer rubrum	10	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				

10 = Total Cover
 50% of total cover: **5** 20% of total cover: **2**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	0	Indicator Status
1	Lonicera japonica	40	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

40 = Total Cover
 50% of total cover: **20** 20% of total cover: **8**

Woody Vine Stratum	(Plot Size: 15' diameter)	Absolute % Cover	0	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **3** (A)

Total Number of Dominant Species Across all Strata: **3** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **100.00%** (A/B)

Prevalence Index worksheet

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> 110 </u>	x 3 = <u> 330 </u>
FACU species <u> 0 </u>	x 4 = <u> 0 </u>
UPL species <u> 0 </u>	x 5 = <u> 0 </u>
Column totals <u> 110 </u>	(A) <u> 330 </u> (B)

Prevalence Index = B/A = **3.00**

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Approximately 60% of plot not vegetated.

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 ¹	Loc2		
0-6	10YR 5 / 4	100					sandy loam	lots of rock in core
6+								ballast rock

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 Mucky Mineral (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)		

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

Restrictive Layer (if observed):

Type: rock

Depth (inches): 6

Hydric soil present? Yes No

Remarks:

Soils are well-drained and not hydric. They have been disturbed from CSX railroad activities.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 24, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-21-wet
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.392392 Long: -77.453837 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Depressional wetland north of Proctors Creek. Wetland is within floodplain of the creek. Some surface water present throughout wetland. Soils are saturated to the surface. Pepperbush is the dominant vegetation species. Greenbriar is also dense throughout wetland. Field Sheet: 18-A-WTL-20, wet.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>1</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	---

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

Remarks: **Trees have buttressed trunks. Surface water pools are present throughout wetland. Soils saturated to the surface.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-21-wet**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Liquidambar styraciflua	50	Y	FAC
2	Liriodendron tulipifera	30	Y	FACU
3				
4				
5				
6				
7				
		80 = Total Cover		
50% of total cover: 40		20% of total cover: 16		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 80.00% (A/B)

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Clethra alnifolia	80	Y	FAC
2	Smilax rotundifolia	35	Y	FAC
3	Lindera benzoin	20	N	FAC
4	Ilex opaca	20	N	FACU
5				
6				
7				
8				
9				
		155 = Total Cover		
50% of total cover: 77.5		20% of total cover: 31		

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>2</u>	x 2 = <u>4</u>
FAC species <u>185</u>	x 3 = <u>555</u>
FACU species <u>50</u>	x 4 = <u>200</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>237</u>	(A) <u>759</u> (B)

Prevalence Index = B/A = 3.20

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Leersia virginica	2	Y	FACW
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
		2 = Total Cover		
50% of total cover: 1		20% of total cover: 0.4		

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is $\leq 3.0^1$

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Woody Vine Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
		0 = Total Cover		
50% of total cover: 0		20% of total cover: 0		

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 (1m) tall.

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

Woody vines - 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.)

American holly is growing on high spots within wetland. Trees are buttressed.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-A-21-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	3	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	3	

Total Score 11

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-A-21-wet Shallow root system in wetland



06-WTL-A-21-wet View of north end of wetland



06-WTL-A-21-wet View of north end of wetland

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 24, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-21-upl
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 60%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.392313 Long: -77.45397 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Data point taken on hillslope up to railroad ballast. Soils are well drained. Field Sheet: 18-A-WTL-20, up.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Soils are well-drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-21-upl**

Tree Stratum (Plot Size: 30' diameter)		Absolute % Cover	0	Indicator Status
1	Liriodendron tulipifera	60	Y	FACU
2	Liquidambar styraciflua	20	Y	FAC
3				
4				
5				
6				
7				

Dominance Test worksheet:

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

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

Percent of Dominant Species that are OBL, FACW, or FAC: 83.33% (A/B)

80 = Total Cover

50% of total cover: 40 20% of total cover: 16

Prevalence Index worksheet

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>70</u>	x 3 = <u>210</u>
FACU species <u>60</u>	x 4 = <u>240</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>130</u>	(A) <u>450</u> (B)

Prevalence Index = B/A = 3.46

Sapling/Shrub Stratum (Plot Size: **15' diameter**)

1	Asimina triloba	25	Y	FAC
2	Zanthoxylum clava-herculis	10	Y	FAC
3	Acer rubrum	10	Y	FAC
4				
5				
6				
7				
8				
9				

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

45 = Total Cover

50% of total cover: 22.5 20% of total cover: 9

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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Herb Stratum (Plot Size: **5' diameter**)

1	Lonicera japonica	5	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

Woody Vine Stratum (Plot Size: **15' diameter**)

1	none			
2				
3				
4				
5				

5 = Total Cover

50% of total cover: 2.5 20% of total cover: 1

Hydrophytic Vegetation Present? Yes No

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

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 24, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-22-wet
 Investigator(s): L. Eggering & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.393209 Long: -77.454333 Datum: NAD-1983
 Soil Map Unit Name: Norfolk fine sandy loam, 0 to 6 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Depressional wetland north of Proctors Creek. Wetland is within floodplain of the creek. Pepperbush is the dominant vegetation species. Soils are saturated to the surface. Some areas have intermittent pools. Wetland continues south and flows into Proctors Creek. Braided channels are present near the creek. Field Sheet: 18-A-WTL-19 wet.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>6</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are saturated to the surface.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-22-wet**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Acer rubrum	30	Y	FAC
2	Liquidambar styraciflua	30	Y	FAC
3	Liriodendron tulipifera	15	Y	FACU
4				
5				
6				
7				

75 = Total Cover

50% of total cover: **37.5** 20% of total cover: **15**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Clethra alnifolia	80	Y	FAC
2	Lindera benzoin	10	N	FAC
3	Acer rubrum	5	N	FAC
4				
5				
6				
7				
8				
9				

95 = Total Cover

50% of total cover: **47.5** 20% of total cover: **19**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Lonicera japonica	15	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

15 = Total Cover

50% of total cover: **7.5** 20% of total cover: **3**

Woody Vine Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 80.00% (A/B)

Prevalence Index worksheet

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>170</u>	x 3 = <u>510</u>
FACU species <u>15</u>	x 4 = <u>60</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>185</u>	(A) <u>570</u> (B)

Prevalence Index = B/A = 3.08

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

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 ¹		
0-2	10YR	3 / 3	100					silt loam
2-12	10YR	6 / 2	80	10YR	5 / 8	20		silty clay

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histisol (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 Mucky Mineral (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 checked="" 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)	

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

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric soil present? Yes X No _____

Remarks:
Soils become much more sandy closer to Proctors Creek channel.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-A-22-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	3	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	3	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	2	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	3	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	2	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	3	

Total Score 16

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-A-22-wet Shallow root systems in wetland.



06-WTL-A-22-wet Typical view of wetland.



06-WTL-A-22-wet Typical view of wetland.



06-WTL-A-22-wet Stormwater manhole in southeast corner of wetland.



06-WTL-A-22-wet Wetland south of Proctor Creek, view west.



06-WTL-A-22-wet Inundation in wetland.

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-22-upl**

Tree Stratum (Plot Size: <u>30' diameter</u>)		Absolute % Cover	0	Indicator Status
1	<u>Liriodendron tulipifera</u>	<u>50</u>	<u>Y</u>	<u>FACU</u>
2	<u>Pinus taeda</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
3	<u>Juniperus virginiana</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>
4				
5				
6				
7				

90 = Total Cover
 50% of total cover: 45 20% of total cover: 18

Sapling/Shrub Stratum (Plot Size: <u>15' diameter</u>)		Absolute % Cover	0	Indicator Status
1	<u>Quercus alba</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>
2				
3				
4				
5				
6				
7				
8				
9				

30 = Total Cover
 50% of total cover: 15 20% of total cover: 6

Herb Stratum (Plot Size: <u>5' diameter</u>)		Absolute % Cover	0	Indicator Status
1	<u>Lonicera japonica</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

5 = Total Cover
 50% of total cover: 2.5 20% of total cover: 1

Woody Vine Stratum (Plot Size: <u>15' diameter</u>)		Absolute % Cover	0	Indicator Status
1	<u>Lonicera japonica</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				

10 = Total Cover
 50% of total cover: 5 20% of total cover: 2

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

Prevalence Index worksheet

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>35</u>	x 3 = <u>105</u>
FACU species <u>100</u>	x 4 = <u>400</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>135</u>	(A) <u>505</u> (B)

Prevalence Index = B/A = 3.74

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

Herb layer nearly absent.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 17, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-23-wet
 Investigator(s): J. Budnik & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.389945 Long: -77.454452 Datum: NAD-1983
 Soil Map Unit Name: Ochrepts and Udults, strongly sloping NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: **Stream (18-B-STR-03) flows into this wetland creating shallow braided channels throughout the area. Surface water present within the shallow channels. Water drains toward the north and eventually into an ephemeral channel. Siltation is present (up to 10 inches). Wetland also receives seep water from adjacent hillside.**
 Field Sheet: **18-B-WTL-01, wet.**

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>1</u>	
Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>10</u>	
Saturation present? (includes capillary fringe) Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **18-B-STR-03 flows into this wetland. Braided channels throughout. Channels have some surface water.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-23-wet**

Tree Stratum	(Plot Size: <u>30' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2	<u>Acer rubrum</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				

50 = Total Cover
 50% of total cover: 25 20% of total cover: 10

Sapling/Shrub Stratum	(Plot Size: <u>15' diameter</u>)	15		
1	<u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2	<u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3	<u>Ilex opaca</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
4				
5				
6				
7				
8				
9				

30 = Total Cover
 50% of total cover: 15 20% of total cover: 6

Herb Stratum	(Plot Size: <u>5' diameter</u>)			
1	<u>Smilax rotundifolia</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2	<u>Juncus effusus</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>
3	<u>Carex spp.</u>	<u>5</u>	<u>N</u>	
4	<u>Ilex opaca</u>	<u>5</u>	<u>N</u>	<u>FACU</u>
5				
6				
7				
8				
9				
10				
11				

50 = Total Cover
 50% of total cover: 25 20% of total cover: 10

Woody Vine Stratum	(Plot Size: <u>15' diameter</u>)			
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: 7 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 85.71% (A/B)

Prevalence Index worksheet

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>100</u>	x 3 = <u>300</u>
FACU species <u>15</u>	x 4 = <u>60</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>125</u>	(A) <u>380</u> (B)

Prevalence Index = B/A = 3.04

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No

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

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 ¹	Loc2		
0-10	5Y 4 / 2	60	10YR 5 / 6	40			silty clay	
10-15	5Y 5 / 1	85	5YR 5 / 8	15			silty clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> 2 cm Mucky Mineral (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)		

³Indicators 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:

Siltation present in top 10". Soils are more gray with mottles below 10".

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-A-23-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	2	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 10

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-A-23-wet Typical view of wetland



06-WTL-A-23-wet Typical view of wetland



06-WTL-A-23-wet Typical view of wetland



06-WTL-A-23-wet Wetland soil core



06-WTL-A-23-wet Typical view of adjacent upland



06-WTL-A-23-wet Upland soil core

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 17, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-A-23-upl
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 20%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.389789 Long: -77.427324 Datum: NAD-1983
 Soil Map Unit Name: Ochrepts and Udults, strongly sloping NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Data point taken on hill/ridge adjacent to WTL-01. Soils are well drained. Oak species dominate the upland forested area. Field Sheet: 18-B-WTL-01, up.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-A-23-upl**

Tree Stratum	(Plot Size: <u>30' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liriodendron tulipifera</u>	<u>35</u>	<u>Y</u>	<u>FACU</u>
2	<u>Quercus stellata</u>	<u>20</u>	<u>Y</u>	<u>UPL</u>
3	<u>Quercus alba</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>
4	<u>Quercus falcata</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>
5				
6				
7				

95 = Total Cover
 50% of total cover: 47.5 20% of total cover: 19

Sapling/Shrub Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Ilex opaca</u>	<u>2</u>	<u>N</u>	<u>FACU</u>
2				
3				
4				
5				
6				
7				
8				
9				

2 = Total Cover
 50% of total cover: 1 20% of total cover: 0.4

Herb Stratum	(Plot Size: <u>5' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Smilax rotundifolia</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

5 = Total Cover
 50% of total cover: 2.5 20% of total cover: 1

Woody Vine Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 20.00% (A/B)

Prevalence Index worksheet

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>77</u>	x 4 = <u>308</u>
UPL species <u>20</u>	x 5 = <u>100</u>
Column totals <u>102</u>	(A) <u>423</u> (B)

Prevalence Index = B/A = 4.15

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (city) Sampling Date: March 10, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-01-wet
 Investigator(s): L. Eggering & D. Mitchell Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): rr ditch Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.559338 Long: -77.451918 Datum: NAD-1983
 Soil Map Unit Name: Udorthents-Dumps complex, pits NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Railside wetland. Field Sheet: 16-A-Wet-1, wt dp 1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>2-6</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Hydrology present due to runoff from adjacent hillside and ditch being lower than the rail.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-01-wet**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Microstegium vimineum	10	Y	FAC
2	Phalaris arundinacea	10	Y	FACW
3	Carex spp.	5	Y	
4				
5				
6				
7				
8				
9				
10				
11				

25 = Total Cover
 50% of total cover: **12.5** 20% of total cover: **5**

Woody Vine Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **2** (A)

Total Number of Dominant Species Across all Strata: **3** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **66.67%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	0 x 1 = 0
FACW species	10 x 2 = 20
FAC species	10 x 3 = 30
FACU species	0 x 4 = 0
UPL species	0 x 5 = 0
Column totals	20 (A) 50 (B)

Prevalence Index = B/A = **2.50**

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

Algae present in wetland.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-S-01-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	0	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	0	

Total Score 3

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-S-01-wet North end of wetland looking south



06-WTL-S-01-wet Riser in wetland



06-WTL-S-01-wet Typical view of wetland along railroad

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-01-upl**

Tree Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Robinia pseudoacacia	20	Y	FACU
2	Celtis occidentalis	20	Y	FACU
3	Acer negundo	10	Y	FAC
4				
5				
6				
7				

50 = Total Cover
 50% of total cover: **25** 20% of total cover: **10**

Sapling/Shrub Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Lonicera japonica	80	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

80 = Total Cover
 50% of total cover: **40** 20% of total cover: **16**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

Prevalence Index worksheet

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> 40 </u>	x 4 = <u> 160 </u>
UPL species <u> 0 </u>	x 5 = <u> 0 </u>
Column totals <u> 130 </u>	(A) <u> 430 </u> (B)

Prevalence Index = B/A = 3.31

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

Ground covered with honeysuckle, upland trees along slope.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (city) Sampling Date: March 11, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-02-wet
 Investigator(s): D. Mitchell & L. Eggering Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.547532 Long: -77.427306 Datum: NAD-1983
 Soil Map Unit Name: Udorthents-Dumps complex, pits NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: **Marginal functionality for flood storage, water quality and habitat.**
Field Sheet: 17-A-WTL-1, wet dp 1.

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0-6</u>	
Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u>	
Saturation present? (includes capillary fringe) Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u>	

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

Remarks: **Water is from large hillside. It crosses an old road bed and existing powerline corridor and is located in a wide (20-30') ditch.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-02-wet**

Tree Stratum (Plot Size: 30' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Betula nigra	20	Y	FACW
2	Liquidambar styraciflua	5	Y	FAC
3				
4				
5				
6				
7				

25 = Total Cover
 50% of total cover: **12.5** 20% of total cover: **5**

Sapling/Shrub Stratum (Plot Size: 15' diameter) 15		Absolute % Cover	Dominant Species?	Indicator Status
1	Liquidambar styraciflua	10	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				

10 = Total Cover
 50% of total cover: **5** 20% of total cover: **2**

Herb Stratum (Plot Size: 5' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Woody Vine Stratum (Plot Size: 15' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **3** (A)

Total Number of Dominant Species Across all Strata: **3** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **100.00%** (A/B)

Prevalence Index worksheet

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> 15 </u>	x 3 = <u> 45 </u>
FACU species <u> 0 </u>	x 4 = <u> 0 </u>
UPL species <u> 0 </u>	x 5 = <u> 0 </u>
Column totals <u> 35 </u>	(A) <u> 85 </u> (B)

Prevalence Index = B/A = **2.43**

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

No herbaceous vegetation in inundated areas. Sweetgum sapplings are along fringe. Several river birches growing in the middle of the ditch.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-S-02-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 5

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-S-02-wet Small depressional wetland.



06-WTL-S-02-wet Typical wetland habitat.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (city) Sampling Date: March 17, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-02-upl
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 20%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.547443 Long: -77.427324 Datum: NAD-1983
 Soil Map Unit Name: Udorthents-Dumps complex, pits NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> X </u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u> X </u> Wetland Hydrology Present? Yes <u> </u> No <u> X </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> X </u>
Remarks: Upland area on south side of wetland. Field Sheet: 17-a-WTL-1, up dp 1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u> X </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **No hydrology.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-02-upl**

Tree Stratum	(Plot Size: <u>30' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Quercus phellos</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2	<u>Liquidambar styraciflua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				

50 = Total Cover
 50% of total cover: 25 20% of total cover: 10

Sapling/Shrub Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				
8				
9				

10 = Total Cover
 50% of total cover: 5 20% of total cover: 2

Herb Stratum	(Plot Size: <u>5' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Festuca spp.</u>	<u>40</u>	<u>Y</u>	
2	<u>Lonicera japonica</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
3	<u>Juncus effusus</u>	<u>5</u>	<u>N</u>	<u>FACW</u>
4				
5				
6				
7				
8				
9				
10				
11				

65 = Total Cover
 50% of total cover: 32.5 20% of total cover: 13

Woody Vine Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 80.00% (A/B)

Prevalence Index worksheet

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>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>85</u>	(A) <u>250</u> (B)

Prevalence Index = B/A = 2.94

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (City) Sampling Date: March 14, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-03-wet
 Investigator(s): J. Budnik & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.524283 Long: -77.431287 Datum: NAD-1983
 Soil Map Unit Name: Udorthents-Dumps complex, pits NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Depression area in pipeline ROW, Parallel to railroad. Surface water present, mostly attributed to recent rain event. Some rutting from vehicles and evidence of recent mowing (cattails have been cut). Some aquatic insects present. Fairly low functional value due to small size, proximity to railroad, and disturbance from pipeline ROW. Field Sheet: 17-B-WTL-01, wet 1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u><3 inches</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Surface water present throughout most of small wetland.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-03-wet**

Tree Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: _____ (B)

Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column totals _____	(A) _____ (B) _____

Prevalence Index = B/A = _____

Sapling/Shrub Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is $\leq 3.0^1$

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Typha angustifolia	40	Y	OBL
2	Juncus effusus	15	Y	FACW
3	Carex spp.	10	N	
4	Unknown spp.	10	N	
5				
6				
7				
8				
9				
10				
11				

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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

75 = Total Cover

50% of total cover: **37.5** 20% of total cover: **15**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				

Hydrophytic Vegetation Present? Yes No

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

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-S-03-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	0	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	0	

Total Score 2

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-S-03-wet North end of wetland, looking south



06-WTL-S-03-wet South end of wetland, looking north



06-WTL-S-03-wet Typical view of wetland, looking south



06-WTL-S-03-wet View outside railroad ROW



06-WTL-S-03-wet Typical view of wetland, looking north



06-WTL-S-03-wet Wetland soil core

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (City) Sampling Date: March 14, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-03-upl
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 10
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.523906 Long: -77.431227 Datum: NAD-1983
 Soil Map Unit Name: Udorthents-Dumps complex, pits NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Upslope from wetland within pipeline ROW. Soils are moderately to well drained. Field Sheet: 17-B-WTL-01, up 1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
--	--

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

Remarks: **Soils moderately to well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-03-upl**

Tree Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0**

20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Juniperus virginiana	10	Y	FACU
2				
3				
4				
5				
6				
7				
8				
9				

10 = Total Cover

50% of total cover: **5**

20% of total cover: **2**

Herb Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Phytolacca americana	20	Y	FACU
2	Lamium amplexicaule	15	Y	
3	Stellaria media	15	Y	UPL
4	Allium spp.	15	Y	
5				
6				
7				
8				
9				
10				
11				

65 = Total Cover

50% of total cover: **32.5**

20% of total cover: **13**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Lonicera japonica	45	Y	FAC
2				
3				
4				
5				

45 = Total Cover

50% of total cover: **22.5**

20% of total cover: **9**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 16.67% (A/B)

Prevalence Index worksheet

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>45</u> x 3 = <u>135</u>
FACU species	<u>30</u> x 4 = <u>120</u>
UPL species	<u>15</u> x 5 = <u>75</u>
Column totals	<u>90</u> (A) <u>330</u> (B)

Prevalence Index = B/A = 3.67

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (City) Sampling Date: March 14, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-04-wet
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.51861 Long: -77.430174 Datum: NAD-1983
 Soil Map Unit Name: Udorthents-Dumps complex, pits NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u> No <u> </u>	

Remarks: **Lat/Long GPS point taken 75 ft from wetland. Wetland inside fenced-in detention basin. No access to area. Wetland surveyed from railroad ROW. Drainage appears to come from city stormwater system. Phragmites and broadleaf cattails present throughout. Field Sheet: 17-B-WTL-02, wet 1.**

HYDROLOGY

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

Field Observations:		Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface water present?	Yes <u>X</u> No <u> </u> Depth (inches): <u><2 inches</u>	
Water table present?	Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u>	
Saturation present? (includes capillary fringe)	Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Surface water present throughout wetland. Obligate plants present.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-04-wet**

Tree Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: _____ (B)

Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column totals _____	(A) _____ (B) _____

Prevalence Index = B/A = _____

Sapling/Shrub Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is $\leq 3.0^1$

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Typha latifolia	40	Y	OBL
2	Phragmites australis	40	Y	FACW
3	Juncus effusus	15	N	FACW
4				
5				
6				
7				
8				
9				
10				
11				

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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

95 = Total Cover

50% of total cover: **47.5** 20% of total cover: **19**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

Hydrophytic Vegetation Present? Yes No

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

Surveyed from railroad ROW.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-S-04-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	3	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 11

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-S-04-wet Elevated view of wetland from railroad ROW



06-WTL-S-04-wet Elevated view of wetland from railroad ROW



06-WTL-S-04-wet Elevated view of wetland from railroad ROW



06-WTL-S-04-wet Elevated view of wetland from railroad ROW



06-WTL-S-04-wet Elevated view of wetland from railroad ROW



06-WTL-S-04-wet Wetland soil core

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (City) Sampling Date: March 14, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-04-upl
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 15
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.518643 Long: -77.430293 Datum: NAD-1983
 Soil Map Unit Name: Udorthents-Dumps complex, pits NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Upslope point taken just below railroad ballast. Soils are well drained. Field Sheet: 17-B-WTL-02, up 1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-04-upl**

Tree Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Juniperus virginiana	15	Y	FACU
2				
3				
4				
5				
6				
7				
8				
9				

15 = Total Cover

50% of total cover: **7.5** 20% of total cover: **3**

Herb Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Stellaria media	40	Y	UPL
2	Lamium amplexicaule	20	Y	
3	Rubus spp.	15	N	
4	Verbascum spp.	5	N	
5				
6				
7				
8				
9				
10				
11				

80 = Total Cover

50% of total cover: **40** 20% of total cover: **16**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Lonicera japonica	30	Y	FAC
2				
3				
4				
5				

30 = Total Cover

50% of total cover: **15** 20% of total cover: **6**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 25.00% (A/B)

Prevalence Index worksheet

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>15</u> x 4 =	<u>60</u>
UPL species	<u>40</u> x 5 =	<u>200</u>
Column totals	<u>85</u> (A)	<u>350</u> (B)

Prevalence Index = B/A = 4.12

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (City) Sampling Date: March 15, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-05-wet
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.498331 Long: -77.42905 Datum: NAD-1983
 Soil Map Unit Name: Udorthents-Dumps complex, pits NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Wetland located between railroad and I-95. Located adjacent to WTL-03, divided by concrete barrier. Some standing water present. Water stained leaves. Field Sheet: 17-B-WTL-04, wet 1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>1</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>12</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0-12</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Some surface water present. Saturated throughout.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-05-wet**

Tree Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Populus deltoides	20	Y	FAC
2	Salix nigra	20	Y	OBL
3	Ulmus rubra	20	Y	FAC
4	Celtis laevigata	10	N	FACW
5				
6				
7				

70 = Total Cover

50% of total cover: **35** 20% of total cover: **14**

Sapling/Shrub Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Acer rubrum	15	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				

15 = Total Cover

50% of total cover: **7.5** 20% of total cover: **3**

Herb Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Lonicera japonica	25	Y	FAC
2				
3				
4				
5				

25 = Total Cover

50% of total cover: **12.5** 20% of total cover: **5**

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)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species <u>20</u>	x 1 = <u>20</u>
FACW species <u>10</u>	x 2 = <u>20</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>110</u>	(A) <u>280</u> (B)

Prevalence Index = B/A = 2.55

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-S-05-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 8

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-S-05-wet Typical view of wetland, looking toward the railroad



06-WTL-S-05-wet Typical view of wetland



06-WTL-S-05-wet Typical view of wetland



06-WTL-S-05-wet Typical view of wetland



06-WTL-S-05-wet Typical view of wetland



06-WTL-S-05-wet Typical view of wetland

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (City) Sampling Date: March 15, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-05-upl
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 20%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.498324 Long: -77.429244 Datum: NAD-1983
 Soil Map Unit Name: Udorthents-Dumps complex, pits NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u> X </u> Hydric Soil Present? Yes <u> </u> No <u> X </u> Wetland Hydrology Present? Yes <u> </u> No <u> X </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> X </u>
Remarks: Data point on hillslope just below railroad ballast. Soils are well drained. Field Sheet: 17-B-WTL-03 & 04, up.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u> X </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-05-upl**

Tree Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none	15	Y	
2				
3				
4				
5				
6				
7				
8				
9				

15 = Total Cover

50% of total cover: **7.5** 20% of total cover: **3**

Herb Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Festuca spp.	45	Y	
2	Sorghum halepense	20	Y	FACU
3	Rubus spp.	10	N	
4	Lamium amplexicaule	10	N	
5	Geranium carolinianum	10	N	
6	Asteraceae spp.	2	N	
7				
8				
9				
10				
11				

97 = Total Cover

50% of total cover: **48.5** 20% of total cover: **19.4**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Lonicera japonica	1	N	FAC
2				
3				
4				
5				

1 = Total Cover

50% of total cover: **0.5** 20% of total cover: **0.2**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across all Strata: **3** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **0.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	0 x 1 = 0
FACW species	0 x 2 = 0
FAC species	1 x 3 = 3
FACU species	20 x 4 = 80
UPL species	0 x 5 = 0
Column totals	21 (A) 83 (B)

Prevalence Index = B/A = **3.95**

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No **X**

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

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (City) Sampling Date: March 15, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-06-wet
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.499058 Long: -77.42922 Datum: NAD-1983
 Soil Map Unit Name: Udorthents-Dumps complex, pits NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: **Depressional wetland between railroad ballast and pipeline/powerline ROW. Surface water throughout. Juncus effusus and broadleaf cattail are dominant species.**
Field Sheet: 17-B-WTL-05, wet.

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0-4</u>	
Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe) Yes <u>X</u> No <u> </u> Depth (inches): <u>0-12</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Surface water present throughout most of wetland. Soils are saturated.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-06-wet**

Tree Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Juncus effusus	45	Y	FACW
2	Typha latifolia	30	Y	OBL
3	Carex spp.	15	N	
4				
5				
6				
7				
8				
9				
10				
11				

90 = Total Cover

50% of total cover: **45** 20% of total cover: **18**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: _____ (B)

Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	_____ x 1 = _____
FACW species	_____ x 2 = _____
FAC species	_____ x 3 = _____
FACU species	_____ x 4 = _____
UPL species	_____ x 5 = _____
Column totals	_____ (A) _____ (B)

Prevalence Index = B/A = _____

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is $\leq 3.0^1$
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- _____ Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

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 ¹	Loc2		
0-8	2.5Y 4 / 2	90	7.5YR 5 / 8	10	RM		silty clay loam	
8-10	5Y 4 / 1	80	7.5YR 5 / 8	20	RM		silty clay	
10-12	10YR 5 / 6	90	2.5Y 4 / 2	10			clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> 2 cm Mucky Mineral (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)		

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

Restrictive Layer (if observed):
 Type: clay
 Depth (inches): 10

Hydric soil present? Yes No

Remarks:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-S-06-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 4

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-S-06-wet Typical view of wetland



06-WTL-S-06-wet Typical view of wetland



06-WTL-S-06-wet Typical view of wetland



06-WTL-S-06-wet Wetland soil core



06-WTL-S-06-wet View of upland in powerline ROW



06-WTL-S-06-wet Upland soil core

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (City) Sampling Date: March 15, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-06-upl
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 10
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.499083 Long: -77.429314 Datum: NAD-1983
 Soil Map Unit Name: Udorthents-Dumps complex, pits NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u> X </u> Hydric Soil Present? Yes <u> </u> No <u> X </u> Wetland Hydrology Present? Yes <u> </u> No <u> X </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> X </u>
Remarks: Data point on hillslope within pipeline/powerline ROW. Soils are well drained. Field Sheet: 17-B-WTL-05 & 06, up.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u> X </u>
---	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-06-upl**

Tree Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Festuca arundinacea	50	Y	FACU
2	Rubus spp.	15	N	
3	Allium spp.	10	N	
4	Trifolium spp.	10	N	
5				
6				
7				
8				
9				
10				
11				

85 = Total Cover

50% of total cover: **42.5** 20% of total cover: **17**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Lonicera japonica	20	Y	FAC
2				
3				
4				
5				

20 = Total Cover

50% of total cover: **10** 20% of total cover: **4**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

Prevalence Index worksheet

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>20</u> x 3 = <u>60</u>
FACU species	<u>50</u> x 4 = <u>200</u>
UPL species	<u>0</u> x 5 = <u>0</u>
Column totals	<u>70</u> (A) <u>260</u> (B)

Prevalence Index = B/A = 3.71

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (City) Sampling Date: March 15, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-07-wet
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.4981875 Long: -77.429264 Datum: NAD-1983
 Soil Map Unit Name: Udorthents-Dumps complex, pits NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Small depressional wetland in pipeline ROW, between railroad and I-95. Receives drainage from 17-B-cul-11. Field Sheet: 17-B-WTL-03, wet 1.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>5</u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? (includes capillary fringe) Yes <u>X</u> No <u> </u> Depth (inches): <u>0-12</u>	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils saturated throughout. Receives drainage from culvert. Snails present.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-07-wet**

Tree Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Typha latifolia	15	Y	OBL
2	Juncus effusus	15	Y	FACW
3	Osmunda cinnamomea	10	Y	
4	Rumex spp.	5	N	
5				
6				
7				
8				
9				
10				
11				

45 = Total Cover

50% of total cover: **22.5** 20% of total cover: **9**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: _____ (B)

Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	x 1 = _____
FACW species	x 2 = _____
FAC species	x 3 = _____
FACU species	x 4 = _____
UPL species	x 5 = _____
Column totals	(A) _____ (B) _____

Prevalence Index = B/A = _____

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- _____ Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

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 ¹	Loc2		
0-12	2.5Y 2.5 / 1	100					silt loam	
12-16	2.5Y 2.5 / 1	100					sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 checked="" 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 Mucky Mineral (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 checked="" 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)		

³Indicators 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:

Depleted soils with hydrogen sulfide odor.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-S-07-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 6

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-S-07-wet Typical view of wetland adjacent railroad



06-WTL-S-07-wet Culvert 12



06-WTL-S-07-wet Typical view of wetland



06-WTL-S-07-wet Typical view of wetland



06-WTL-S-07-wet Typical view of wetland toward railroad



06-WTL-S-07-wet Typical view of inundated portion of the wetland

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-07-upl**

Tree Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none	15	Y	
2				
3				
4				
5				
6				
7				
8				
9				

15 = Total Cover

50% of total cover: **7.5** 20% of total cover: **3**

Herb Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Festuca spp.	45	Y	
2	Sorghum halepense	20	Y	FACU
3	Rubus spp.	10	N	
4	Lamium amplexicaule	10	N	
5	Geranium carolinianum	10	N	
6	Asteraceae spp.	2	N	
7				
8				
9				
10				
11				

97 = Total Cover

50% of total cover: **48.5** 20% of total cover: **19.4**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Lonicera japonica	1	N	FAC
2				
3				
4				
5				

1 = Total Cover

50% of total cover: **0.5** 20% of total cover: **0.2**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across all Strata: **3** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **0.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	0 x 1 = 0
FACW species	0 x 2 = 0
FAC species	1 x 3 = 3
FACU species	20 x 4 = 80
UPL species	0 x 5 = 0
Column totals	21 (A) 83 (B)

Prevalence Index = B/A = **3.95**

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No **X**

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

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (City) Sampling Date: March 15, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-08-wet
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.498016 Long: -77.429642 Datum: NAD-1983
 Soil Map Unit Name: Udorthents-Dumps complex, pits NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: **Depressional wetland between railroad and pipeline ROW. Some surface water present and soils are saturated. Broadleaf cattail is dominant vegetation species. Soils disturbed by railroad, pipeline, and nearby industry.**
 Field Sheet: **17-B-WTL-06, wet.**

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0-3</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>5</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0-12</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Saturated throughout.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-08-wet**

Tree Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Typha latifolia	60	Y	OBL
2	Juncus effusus	20	Y	FACW
3	Rubus spp.	15	N	
4				
5				
6				
7				
8				
9				
10				
11				

95 = Total Cover

50% of total cover: **47.5** 20% of total cover: **19**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Lonicera japonica	30	Y	FAC
2				
3				
4				
5				

30 = Total Cover

50% of total cover: **15** 20% of total cover: **6**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **3** (A)

Total Number of Dominant Species Across all Strata: **3** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **100.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	60 x 1 = 60
FACW species	20 x 2 = 40
FAC species	30 x 3 = 90
FACU species	0 x 4 = 0
UPL species	0 x 5 = 0
Column totals	110 (A) 190 (B)

Prevalence Index = B/A = 1.73

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

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 ¹	Loc2		
0-12	10YR 2 / 1	100					loam	muck/disturbed
12-15	10YR 4 / 1	95	10YR 5 / 6	5			clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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"/> Piedmont Floodplain Soils (F19)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 2 cm Mucky Mineral (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input checked="" 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)		

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

Restrictive Layer (if observed):
 Type: clay
 Depth (inches): 15 Hydric soil present? Yes No

Remarks:
Upper soils are disturbed. Wetland likely filters runoff from adjacent industrial complex. Upper soils are muck

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-S-08-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 4

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-S-08-wet Photo description.



06-WTL-S-08-wet Culvert 11



06-WTL-S-08-wet Typical view of wetland and gas ROW



06-WTL-S-08-wet Typical view of wetland



06-WTL-S-08-wet Typical view of wetland



06-WTL-S-08-wet Typical view of upland adjacent area

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (City) Sampling Date: March 15, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-08-upl
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 10%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.499083 Long: -77.429314 Datum: NAD-1983
 Soil Map Unit Name: Udorthents-Dumps complex, pits NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u> X </u> Hydric Soil Present? Yes <u> </u> No <u> X </u> Wetland Hydrology Present? Yes <u> </u> No <u> X </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> X </u>
Remarks: Data point on hillslope within pipeline/powerline ROW. Soils are well drained. Field Sheet: 17-B-WTL-05 & 06, up.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u> X </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-08-upl**

Tree Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Festuca arundinacea	50	Y	FACU
2	Rubus spp.	15	N	
3	Allium spp.	10	N	
4	Trifolium spp.	10	N	
5				
6				
7				
8				
9				
10				
11				

85 = Total Cover

50% of total cover: **42.5** 20% of total cover: **17**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Lonicera japonica	20	Y	FAC
2				
3				
4				
5				

20 = Total Cover

50% of total cover: **10** 20% of total cover: **4**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

Prevalence Index worksheet

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>20</u> x 3 = <u>60</u>
FACU species	<u>50</u> x 4 = <u>200</u>
UPL species	<u>0</u> x 5 = <u>0</u>
Column totals	<u>70</u> (A) <u>260</u> (B)

Prevalence Index = B/A = 3.71

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 6 City/County: Richmond Sampling Date: September 13, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-09-wet
 Investigator(s): L. Postaski & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.490205 Long: -77.432877 Datum: NAD-1983
 Soil Map Unit Name: Udorthents-Dumps complex, pits NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
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Remarks: **This wetland is located along the edge of a concrete sidewall between Commerce Road and I-95.**
Field Sheet 17-WTL-02-wet
Note: No photographs for this wetland.

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	<u>X</u> Surface Soil Cracks (B6)
<u> </u> Surface Water (A1)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> High Water Table (A2)	<u> </u> Drainage Patterns (B10)
<u> </u> Saturation (A3)	<u> </u> Moss Trim Lines (B16)
<u>X</u> Water Marks (B1)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Sediment Deposits (B2)	<u> </u> Crayfish Burrows (C8)
<u> </u> Drift Deposits (B3)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u>X</u> Algal Mat or Crust (B4)	<u> </u> Geomorphic Position (D2)
<u> </u> Iron Deposits (B5)	<u> </u> Shallow Aquitard (D3)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> FAC-Neutral Test (D5)
<u>X</u> Water-Stained Leaves (B9)	<u> </u> Sphagnum moss (D8) (LRR T, U)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-09-wet**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Typha latifolia	60	Y	OBL
2 Glyceria striata	20	Y	OBL
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

80 = Total Cover
 50% of total cover: 40 20% of total cover: 16

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: _____ (B)

Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column totals _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No

Remarks: (If observed, list morphological adaptations below).
Typha is present in the low-lying areas near the I-95 underpass.

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 ¹	Loc ²		
0-12	10YR 5 / 2	90	2.5YR 4 / 6	10	C	M	Silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric soil present? Yes No

Remarks: **With a value of 4 or more and a chroma of 2 or less, soils are depleted.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-S-09-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 9

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 6 City/County: Richmond Sampling Date: September 13, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-09-upl
 Investigator(s): L. Postaski & R. Magnum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.490249 Long: -77.433085 Datum: NAD-1983
 Soil Map Unit Name: Udorthents-Dumps complex, pits NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u> X </u> Hydric Soil Present? Yes <u> </u> No <u> X </u> Wetland Hydrology Present? Yes <u> </u> No <u> X </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> X </u>
Remarks: The upland point is directly adjacent to Commerce Road. Field Sheet 17-A-WET-02-upl	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots (C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u> X </u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: No hydrology present.	

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-09-upl**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Poa pratensis 80	Y	FACU
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

80 = Total Cover
 50% of total cover: 40 20% of total cover: 16

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index worksheet

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>80</u>	x 4 = <u>320</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>80</u> (A)	<u>320</u> (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No X

Remarks: (If observed, list morphological adaptations below).
The upland point was taken in an area of mowed Kentucky grass, adjacent to Commerce Road.

SOIL

Sampling Point: 06-WTL-S-09-upl

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 ¹	Loc2		
0-12	10YR	5 / 4	100					Silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks: **The soils are well-drained.**

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (City) Sampling Date: March 15, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-10-wet
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 5%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.489931 Long: -77.435924 Datum: NAD-1983
 Soil Map Unit Name: Udorthents-Dumps complex, pits NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: **Wetland downslopes towards pond-1 and is located within the floodplain of Goode Creek. Some surface water present (1-4"). Soils are inundated. Recieves overflow flooding from pond and Goode Creek.**
 Field Sheet: **17-B-WTL-07, wet.**

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0-4</u>	
Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>8</u>	
Saturation present? (includes capillary fringe) Yes <u>X</u> No <u> </u> Depth (inches): <u>0-12</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Some surface water present. Soils inundated.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-10-wet**

Tree Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0**

20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Liquidambar styraciflua	10	Y	FAC
2	Acer rubrum	10	Y	FAC
3				
4				
5				
6				
7				
8				
9				

20 = Total Cover

50% of total cover: **10**

20% of total cover: **4**

Herb Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Juncus effusus	45	Y	FACW
2	Helianthus angustifolius	25	Y	FACW
3	Dichanthelium spp.	15	N	
4	Dichanthelium clandestinum	10	N	FAC
5				
6				
7				
8				
9				
10				
11				

95 = Total Cover

50% of total cover: **47.5**

20% of total cover: **19**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Lonicera japonica	20	Y	FAC
2				
3				
4				
5				

20 = Total Cover

50% of total cover: **10**

20% of total cover: **4**

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)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	0 x 1 = 0
FACW species	70 x 2 = 140
FAC species	50 x 3 = 150
FACU species	0 x 4 = 0
UPL species	0 x 5 = 0
Column totals	120 (A) 290 (B)

Prevalence Index = B/A = **2.42**

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-S-10-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	3	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	3	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	2	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 13

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-S-10-wet Typical view of wetland



06-WTL-S-10-wet Typical view of wetland



06-WTL-S-10-wet Typical view of wetland in powerline ROW



06-WTL-S-10-wet Typical view of wetland facing railroad



06-WTL-S-10-wet Forested portion of wetland



06-WTL-S-10-wet Wetland soil core

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-10-upl**

Tree Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0**

20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Pinus taeda	10	Y	FAC
2	Juniperus virginiana	10	Y	FACU
3	Rhus glabra	10	Y	
4				
5				
6				
7				
8				
9				

30 = Total Cover

50% of total cover: **15**

20% of total cover: **6**

Herb Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Dichanthelium spp.	25	Y	
2	Helianthis spp.	20	Y	
3	Allium spp.	20	Y	
4	Andropogon virginicus	15	N	FACU
5	Rubus spp.	15	N	
6				
7				
8				
9				
10				
11				

95 = Total Cover

50% of total cover: **47.5**

20% of total cover: **19**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Lonicera japonica	25	Y	FAC
2				
3				
4				
5				

25 = Total Cover

50% of total cover: **12.5**

20% of total cover: **5**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 7 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 28.57% (A/B)

Prevalence Index worksheet

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>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>60</u> (A) <u>205</u> (B)

Prevalence Index = B/A = 3.42

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (City) Sampling Date: March 15, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-11-wet
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.487682 Long: -77.437374 Datum: NAD-1983
 Soil Map Unit Name: Johnston mucky loam, 0 to 3 percent slopes, frequently flooded NWI classification: PSS
 Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> X </u> No <u> </u> Hydric Soil Present? Yes <u> X </u> No <u> </u> Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u>
Remarks: Wetland is within floodplain of Goode Creek. Surface water is present throughout wetland. Depressional area. Field Sheet: 17-B-WTL-08, wet.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 0-5 </u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 0-6 </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> X </u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Surface water present. Soils are inundated.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-11-wet**

Tree Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Liquidambar styraciflua	15	Y	FAC
2	Ligustrum spp.	15	Y	
3				
4				
5				
6				
7				
8				
9				

30 = Total Cover

50% of total cover: **15** 20% of total cover: **6**

Herb Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Juncus effusus	30	Y	FACW
2	Carex spp.	30	Y	
3	Dichanthelium spp.	20	Y	
4	Ludwigea spp.	10	N	
5				
6				
7				
8				
9				
10				
11				

90 = Total Cover

50% of total cover: **45** 20% of total cover: **18**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **2** (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: **40.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	0 x 1 = 0
FACW species	30 x 2 = 60
FAC species	15 x 3 = 45
FACU species	0 x 4 = 0
UPL species	0 x 5 = 0
Column totals	45 (A) 105 (B)

Prevalence Index = B/A = **2.33**

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-S-11-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	1	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 7

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-S-11-wet Typical view of wetland



06-WTL-S-11-wet Typical view of wetland



06-WTL-S-11-wet Typical view of wetland



06-WTL-S-11-wet Typical view of wetland



06-WTL-S-11-wet Typical view of wetland



06-WTL-S-11-wet Wetland soil core

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (City) Sampling Date: March 15, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-11-upl
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 15
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.487682 Long: -77.437374 Datum: NAD-1983
 Soil Map Unit Name: Johnston mucky loam, 0 to 3 percent slopes, frequently flooded NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	

Remarks: **Upland point on hillslope within pipeline/power line ROW. Soils are well drained.**
Field Sheet: 17-B-WTL-08, up.

HYDROLOGY

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

Field Observations:	
Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe) Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-11-upl**

Tree Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Liquidambar styraciflua	30	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				

30 = Total Cover

50% of total cover: **15** 20% of total cover: **6**

Herb Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Schizachyrium scoparium	40	Y	FACU
2	Dichanthelium spp.	20	Y	
3	Sorghastrum nutans	20	Y	FACU
4	Rubus spp.	10	N	
5				
6				
7				
8				
9				
10				
11				

90 = Total Cover

50% of total cover: **45** 20% of total cover: **18**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 25.00% (A/B)

Prevalence Index worksheet

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> 60 </u> x 4 =	<u> 240 </u>
UPL species	<u> 0 </u> x 5 =	<u> 0 </u>
Column totals	<u> 90 </u> (A)	<u> 330 </u> (B)

Prevalence Index = B/A = 3.67

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Richmond (City) Sampling Date: March 15, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-12-wet
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.484733 Long: -77.438333 Datum: NAD-1983
 Soil Map Unit Name: Udorthents-Dumps complex, pits NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Depressional wetland that runs parallel with railroad in pipeline/powerline ROW. Some surface water pools. Soil is undated. Juncus effusus is dominant vegetation species. Low functional value. Field Sheet: 17-B-WTL-09, wet.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0-3</u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? (includes capillary fringe) Yes <u>X</u> No <u> </u> Depth (inches): <u>0-8</u>	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soil is inundated. Surface water present in low spots within wetland.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-12-wet**

Tree Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Juncus effusus	60	Y	FACW
2	Carex spp.	15	N	
3	Helianthus angustifolius	10	N	FACW
4				
5				
6				
7				
8				
9				
10				
11				

85 = Total Cover
 50% of total cover: **42.5** 20% of total cover: **17**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Lonicera japonica	20	Y	FAC
2				
3				
4				
5				

20 = Total Cover
 50% of total cover: **10** 20% of total cover: **4**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **2** (A)

Total Number of Dominant Species Across all Strata: **2** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **100.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	0 x 1 = 0
FACW species	70 x 2 = 140
FAC species	20 x 3 = 60
FACU species	0 x 4 = 0
UPL species	0 x 5 = 0
Column totals	90 (A) 200 (B)

Prevalence Index = B/A = **2.22**

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-S-12-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	0	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	0	

Total Score 2

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-S-12-wet Typical view of wetland



06-WTL-S-12-wet Closer view of wetland plants



06-WTL-S-12-wet Typical view of wetland



06-WTL-S-12-wet Typical view of wetland



06-WTL-S-12-wet Typical view of wetland



06-WTL-S-12-wet Wetland soil core

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-12-upl**

Tree Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Festuca spp.	60	Y	
2	Rubus spp.	30	Y	
3	Asteraceae spp.	10	N	
4	Geranium carolinianum	10	N	
5				
6				
7				
8				
9				
10				
11				

110 = Total Cover

50% of total cover: **55** 20% of total cover: **22**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Lonicera japonica	20	Y	FAC
2				
3				
4				
5				

20 = Total Cover

50% of total cover: **10** 20% of total cover: **4**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **1** (A)

Total Number of Dominant Species Across all Strata: **3** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **33.33%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:	
OBL species	0 x 1 =	0
FACW species	0 x 2 =	0
FAC species	20 x 3 =	60
FACU species	0 x 4 =	0
UPL species	0 x 5 =	0
Column totals	20 (A)	60 (B)

Prevalence Index = B/A = **3.00**

Hydrophytic Vegetation Indicators:

- 1 -Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is ≤3.0¹
- 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present?

Yes **X** No _____

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

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 15, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-13-wet
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.431939 Long: -77.434341 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents NWI classification: PEM/PSS

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: **Depressional wetland that drains into 17-B-STR-10. Located where STR-10 makes a 90 degree turn up against the railroad ballast/access road. Water spreads out within this turn creating a wetland. No defined channel through this area, however it does have flow. Wetland collects/filters trash before reaching STR-10. Field Sheet: 17-B-WTL-10, wet.**

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0-3</u>	
Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>6</u>	
Saturation present? (includes capillary fringe) Yes <u>X</u> No <u> </u> Depth (inches): <u>0-12</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Wetland has flow that drains into STR-10. Beaver activity observed.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-13-wet**

Tree Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Salix nigra	45	Y	OBL
2				
3				
4				
5				
6				
7				
8				
9				

45 = Total Cover

50% of total cover: **22.5** 20% of total cover: **9**

Herb Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Microstegium vimineum	70	Y	FAC
2	Carex stricta	10	N	OBL
3	Scirpus cyperinus	10	N	FACW
4				
5				
6				
7				
8				
9				
10				
11				

90 = Total Cover

50% of total cover: **45** 20% of total cover: **18**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **2** (A)

Total Number of Dominant Species Across all Strata: **2** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **100.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 55	x 1 = 55
FACW species 10	x 2 = 20
FAC species 70	x 3 = 210
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column totals 135	(A) 285 (B)

Prevalence Index = B/A = **2.11**

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

American pondweed is present in areas with flowing water.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-S-13-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 7

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-S-13-wet Typical view of wetland



06-WTL-S-13-wet Typical view of wetland



06-WTL-S-13-wet Typical view of wetland



06-WTL-S-13-wet Wetland soil core



06-WTL-S-13-wet Typical view of adjacent upland



06-WTL-S-13-wet Upland soil core

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 15, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-13-upl
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 35%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.431615 Long: -77.774372 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland?	Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>		
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>		

Remarks: **Data point on hillslope above WTL-10 within pipeline/powerline ROW. Soils are well drained.**
Field Sheet: 17-B-WTL-10, up.

HYDROLOGY

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

Field Observations:		Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Surface water present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Water table present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe)	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-13-upl**

Tree Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0**

20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Quercus palustris	20	Y	FACW
2	Quercus phellos	20	Y	FAC
3	Juniperus virginiana	10	Y	FACU
4				
5				
6				
7				
8				
9				

50 = Total Cover

50% of total cover: **25**

20% of total cover: **10**

Herb Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	grass spp.	50	Y	
2	Schizachyrium scoparium	10	N	FACU
3				
4				
5				
6				
7				
8				
9				
10				
11				

60 = Total Cover

50% of total cover: **30**

20% of total cover: **12**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Lonicera japonica	1	N	FAC
2				
3				
4				
5				

1 = Total Cover

50% of total cover: **0.5**

20% of total cover: **0.2**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **2** (A)

Total Number of Dominant Species Across all Strata: **4** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **50.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	0 x 1 = 0
FACW species	20 x 2 = 40
FAC species	21 x 3 = 63
FACU species	20 x 4 = 80
UPL species	0 x 5 = 0
Column totals	61 (A) 183 (B)

Prevalence Index = B/A = **3.00**

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

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 ¹	Loc2		
0-12	10YR 5 / 6	100					sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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"/> Piedmont Floodplain Soils (F19)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (MLRA 147,148)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> 2 cm Mucky Mineral (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)		

³Indicators 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 **X**

Remarks:

Soils are well drained.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 16, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-14-wet
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.425526 Long: -77.431173 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil X, or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: **Wetland is a stream terrace along 17-B-STR-12. Area receives seepage from adjacent hillside. Area is disturbed due to powerline/pipeline ROW construction. Rice cutgrass and Juncus effusus are dominant plants.**
Field Sheet: 17-B-WTL-11, wet.

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>8</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0-12</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are inundated.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-14-wet**

Tree Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Alnus serrulata	15	Y	OBL
2				
3				
4				
5				
6				
7				
8				
9				

15 = Total Cover

50% of total cover: **7.5** 20% of total cover: **3**

Herb Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Leersia oryzoides	40	Y	OBL
2	Juncus effusus	20	Y	
3	Ludwigia alternifolia	15	N	FACW
4	Dichanthelium spp.	10	N	
5				
6				
7				
8				
9				
10				
11				

85 = Total Cover

50% of total cover: **42.5** 20% of total cover: **17**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Lonicera japonica	20	Y	FAC
2				
3				
4				
5				

20 = Total Cover

50% of total cover: **10** 20% of total cover: **4**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **3** (A)

Total Number of Dominant Species Across all Strata: **4** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **75.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	55 x 1 = 55
FACW species	15 x 2 = 30
FAC species	20 x 3 = 60
FACU species	0 x 4 = 0
UPL species	0 x 5 = 0
Column totals	90 (A) 145 (B)

Prevalence Index = B/A = 1.61

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

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 ¹	Loc2		
0-3	10YR 3 / 3	100					sandy loam	
3-5	10YR 5 / 6	100					sandy loam	very sandy
5-12	10YR 3 / 2	100					sandy loam	fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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"/> Piedmont Floodplain Soils (F19)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 2 cm Mucky Mineral (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" 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)		

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

Restrictive Layer (if observed):
 Type: gravel/sandstone
 Depth (inches): 12 Hydric soil present? Yes X No _____

Remarks:
Soils have been disturbed by creation of pipeline/powerline ROW.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-S-14-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	0	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 3

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-S-14-wet Typical view of wetland



06-WTL-S-14-wet Typical view of wetland



06-WTL-S-14-wet Typical view of wetland

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 16, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-14-upl
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 5%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.425526 Long: -77.431173 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil X, or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Data point taken on stream terrace on opposite side of stream 11 where WTL-11 is located. Soils are well drained. Soils have been disturbed by creation of pipeline/powerline ROW. Field Sheet: 17-B-WTL-11, up.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
---	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-14-upl**

Tree Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Juniperus virginiana	10	Y	FACU
2				
3				
4				
5				
6				
7				
8				
9				

10 = Total Cover

50% of total cover: **5** 20% of total cover: **2**

Herb Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Festuca arundinacea	65	Y	FACU
2	Schizachyrium scoparium	5	N	FACU
3				
4				
5				
6				
7				
8				
9				
10				
11				

70 = Total Cover

50% of total cover: **35** 20% of total cover: **14**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across all Strata: **2** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **0.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	0 x 1 = 0
FACW species	0 x 2 = 0
FAC species	0 x 3 = 0
FACU species	80 x 4 = 320
UPL species	0 x 5 = 0
Column totals	80 (A) 320 (B)

Prevalence Index = B/A = **4.00**

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No **X**

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

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: September 13, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-15-wet
 Investigator(s): L. Postaski & R. Mangum Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.424704 Long: -77.430391 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No _____ (If no, explain in Remarks.)
 Are vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "normal circumstances" present? Yes X No _____
 Are vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: This wetland is located south of Elliham Avenue, east of a railway, and west of I-95. An unnamed tributary to the James River passes through this wetland. Field Sheet 17-WTL-01-wet	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Moss Trim Lines (B16)
<input checked="" 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 checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<input type="checkbox"/> Marl Deposits (B15) (LRR U)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations: Surface water present? Yes _____ No <u>X</u> Depth (inches): _____ Water table present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **An unnamed tributary to the James River passes through this wetland. Rip-rap is present along the northern portion of the wetland where it extends northwest toward Elliham Avenue and the railway.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-15-wet**

Tree Stratum (Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			

_____ = Total Cover
 50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Quercus phellos	20	Y	FACW
2			
3			
4			
5			
6			
7			
8			

_____ = Total Cover
 50% of total cover: 10 20% of total cover: 4

Herb Stratum (Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1 Persicaria bicornis	100	Y	FACW
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

_____ = Total Cover
 50% of total cover: 50 20% of total cover: 20

Woody Vine Stratum (Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			

_____ = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)
 Total Number of Dominant Species Across all Strata: _____ (B)
 Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet
 Total % Cover of: _____ Multiply by: _____
 OBL species _____ x 1 = _____
 FACW species _____ x 2 = _____
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column totals _____ (A) _____ (B)
 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
X 1 -Rapid Test for Hydrophytic Vegetation
 _____ 2 - Dominance Test is >50%
 _____ 3 - Prevalence Index is ≤3.0¹
 _____ Problematic Hydrophytic Vegetation¹ (Explain)

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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes X No _____

Remarks: (If observed, list morphological adaptations below).
The wetland is dominated by smartweed.

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 ¹	Loc ²		
0-12	10YR 4 / 2	80	2.5YR 4 / 6	20	C	M	Clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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: **With a value of 4 or more and a chroma of 2 or less, soils are depleted.**

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-S-15-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	2	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	2	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	2	

Total Score 12

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-S-15-wet Smartweed within wetland.



06-WTL-S-15-wet Smartweed within wetland.

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-15-upl**

Tree Stratum (Plot Size: 30' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Quercus alba	40	Y	FACU
2	Ilex opaca	20	Y	FAC
3				
4				
5				
6				
7				
8				

60 = Total Cover
 50% of total cover: **30** 20% of total cover: **12**

Sapling/Shrub Stratum (Plot Size: 15' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Quercus stellata	20	Y	UPL
2				
3				
4				
5				
6				
7				
8				

20 = Total Cover
 50% of total cover: **10** 20% of total cover: **4**

Herb Stratum (Plot Size: 5' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Woody Vine Stratum (Plot Size: 15' diameter)		Absolute % Cover	Dominant Species?	Indicator Status
1	Vitis labrusca	30	Y	FAC
2	Toxicodendron radicans	5	N	FAC
3				
4				
5				

35 = Total Cover
 50% of total cover: **17.5** 20% of total cover: **7**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **2** (A)

Total Number of Dominant Species Across all Strata: **4** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **50.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 55	x 3 = 165
FACU species 40	x 4 = 160
UPL species 20	x 5 = 100
Column totals 115 (A)	425 (B)

Prevalence Index = B/A = **3.70**

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes No **X**

Remarks: (If observed, list morphological adaptations below).

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 ¹	Loc2		
0-12	10YR	5 / 4	100				Sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR, S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

³Indicators 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 X

Remarks: **The soils are well-drained.**

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 16, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-16-wet
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.416868 Long: -77.432167 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil X, or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Depressional wetland within pipeline/powerline ROW. Some small channels braided throughout wetland. Channels have standing water. Soils are inundated. Field Sheet: 17-B-WTL-12, wet.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0-3</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>8</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0-12</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Some standing water present in channels. Soils are inundated.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-16-wet**

Tree Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Pyrus calleryana	10	Y	
2				
3				
4				
5				
6				
7				
8				
9				

10 = Total Cover

50% of total cover: **5** 20% of total cover: **2**

Herb Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Leersia oryzoides	30	Y	OBL
2	Juncus effusus	20	Y	FACW
3	Carex spp.	10	N	
4	Dichanthelium spp.	10	N	
5	Aster spp.	10	N	
6	Eleocharis palustris	10	N	OBL
7	Rubus spp.	5	N	
8	Solidago spp.	5	N	
9				
10				
11				

100 = Total Cover

50% of total cover: **50** 20% of total cover: **20**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Lonicera japonica	15	Y	FAC
2				
3				
4				
5				

15 = Total Cover

50% of total cover: **7.5** 20% of total cover: **3**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **3** (A)

Total Number of Dominant Species Across all Strata: **4** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **75.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	40 x 1 = 40
FACW species	20 x 2 = 40
FAC species	15 x 3 = 45
FACU species	0 x 4 = 0
UPL species	0 x 5 = 0
Column totals	75 (A) 125 (B)

Prevalence Index = B/A = 1.67

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

SOIL

Sampling Point: 06-WTL-S-16-wet

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 ¹	Loc2		
0-3	7.5YR 2.5 / 2	100					silt loam	
3-10	5Y 4 / 1	90	5YR 5 / 8	5			silty clay	
			2.5YR 4 / 8	5				
10-12	5Y 5 / 1	90	5YR 5 / 8	5			clay	
			2.5YR 4 / 8	5				

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histisol (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 checked="" type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> Piedmont Floodplain Soils (F19)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 2 cm Mucky Mineral (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)	
<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)		

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

Restrictive Layer (if observed):
 Type: clay
 Depth (inches): 10

Hydric soil present? Yes No

Remarks:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-S-16-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	0	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 3

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-S-16-wet Typical view of wetland



06-WTL-S-16-wet Typical view of wetland



06-WTL-S-16-wet Typical view of wetland



06-WTL-S-16-wet Typical view of wetland



06-WTL-S-16-wet Typical view of wetland



06-WTL-S-16-wet Wetland soil core

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 16, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-16-upl
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 35%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.41688 Long: -77.432116 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil X, or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	

Remarks: **Data point taken on hillslope above WTL-12, between wetland to railroad ballast. Soils are fill material from creation of pipeline/powerline ROW and railroad. Soils are well drained.**
Field Sheet: 17-B-WTL-12, up.

HYDROLOGY

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

Field Observations:	
Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-16-upl**

Tree Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Juniperus virginiana	15	Y	FACU
2				
3				
4				
5				
6				
7				
8				
9				

15 = Total Cover

50% of total cover: **7.5** 20% of total cover: **3**

Herb Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Festuca arundinacea	15	Y	FACU
2	Phytolacca americana	15	Y	FACU
3	Rubus spp.	15	Y	
4	Schizachyrium scoparium	5	N	FACU
5				
6				
7				
8				
9				
10				
11				

50 = Total Cover

50% of total cover: **25** 20% of total cover: **10**

Woody Vine Stratum	(Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1	Lonicera japonica	40	Y	FAC
2				
3				
4				
5				

40 = Total Cover

50% of total cover: **20** 20% of total cover: **8**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **1** (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: **20.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	0 x 1 = 0
FACW species	0 x 2 = 0
FAC species	40 x 3 = 120
FACU species	50 x 4 = 200
UPL species	0 x 5 = 0
Column totals	90 (A) 320 (B)

Prevalence Index = B/A = **3.56**

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No **X**

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

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 ¹	Loc2		
0-12		100						dark/black fill material

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 Mucky Mineral (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)		

³Indicators 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 X

Remarks:

Soils are disturbed due to creation of pipeline/powerline ROW and railroad. Fill material.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 16, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-17-wet
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.412882 Long: -77.434147 Datum: NAD-1983
 Soil Map Unit Name: Masada loam, 2 to 6 percent slopes NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil X, or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: **Wetland is disturbed swale along railroad access road. Surface water is present throughout. Fill material and rock from access road is washed in. Wetland has low functional value. Water flows to the south, into a ditch.**
 Field Sheet: **17-B-WTL-13, wet.**

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0-3</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>6</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0-12</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Surface water present throughout this small wetland. Frogs observed.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-17-wet**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Typha angustifolia	45	Y	OBL
2	Panicum virgatum	25	Y	FAC
3	Eleocharis palustris	10	N	OBL
4				
5				
6				
7				
8				
9				
10				
11				

80 = Total Cover

50% of total cover: **40** 20% of total cover: **16**

Woody Vine Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **2** (A)

Total Number of Dominant Species Across all Strata: **2** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **100.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species 55	x 1 = 55
FACW species 0	x 2 = 0
FAC species 25	x 3 = 75
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column totals 80	(A) 130 (B)

Prevalence Index = B/A = **1.63**

Hydrophytic Vegetation Indicators:

- 1 -Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is ≤3.0¹
- 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

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 ¹	Loc2		
0-8	5Y 3 / 1	100					silt loam	
8-15	2.5Y 4 / 2	90	7.5YR 5 / 8	10			loam	gravely loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 Mucky Mineral (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)		

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

Restrictive Layer (if observed):
 Type: gravel
 Depth (inches): 15 Hydric soil present? Yes X No _____

Remarks:
Foul smell. Soils disturbed.

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-S-17-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	1	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	1	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	0	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 3

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-S-17-wet Wetland adjacent and flowing into railroad access road



06-WTL-S-17-wet Typical view of undisturbed portion of wetland



06-WTL-S-17-wet Wetland adjacent and flowing into railroad access road



06-WTL-S-17-wet Typical view of undisturbed portion of wetland



06-WTL-S-17-wet Wetland adjacent and flowing into railroad access road



06-WTL-S-17-wet Wetland soil core

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 16, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-17-upl
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 30%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.412708 Long: -77.434147 Datum: NAD-1983
 Soil Map Unit Name: Masada loam, 2 to 6 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil X, or Hydrology significantly disturbed? Yes Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Data point taken on hillslope. Soils are well drained. Soils have been disturbed by construction of railroad and vegetation was absent. Field Sheet: 17-B-WTL-13, up.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
---	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-17-upl**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Woody Vine Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 0 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: (A/B)

Prevalence Index worksheet

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> 0 </u>	x 4 = <u> 0 </u>
UPL species <u> 0 </u>	x 5 = <u> 0 </u>
Column totals <u> 0 </u>	(A) <u> 0 </u> (B)

Prevalence Index = B/A =

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is $\leq 3.0^1$
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No **X**

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

Vegetation was absent.

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 ¹	Loc2		
0-8	5YR 3 / 3	100					silt loam	
8-12	2.5YR 4 / 6	100					sandy clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (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 Mucky Mineral (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)		

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Yes X No _____

Remarks:

Soils have been disturbed by construction of railroad ROW.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 16, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-18-wet
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 5%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.410361 Long: -77.435974 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Depressional wetland that downslopes to the south. Wetland receives drainage from ditch to the north, as well as seep water. Some surface water pools present. Soils are inundated. Drains into 17-B-STR-14. Field Sheet: 17-B-WTL-14, wet.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u><2 inches</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Receives drainage from ditch to the north and seep water.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-18-wet**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Juncus effusus	25	Y	FACW
2	Leersia oryzoides	20	Y	OBL
3	Rubus spp.	10	N	
4	Vitus spp.	10	N	
5	Dichanthelium spp.	5	N	
6				
7				
8				
9				
10				
11				

70 = Total Cover

50% of total cover: **35** 20% of total cover: **14**

Woody Vine Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: _____ (B)

Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	_____ x 1 = _____
FACW species	_____ x 2 = _____
FAC species	_____ x 3 = _____
FACU species	_____ x 4 = _____
UPL species	_____ x 5 = _____
Column totals	_____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is $\leq 3.0^1$

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-S-18-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	2	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	1	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	0	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 6

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-S-18-wet Typical view of wetland



06-WTL-S-18-wet Typical view of wetland



06-WTL-S-18-wet Typical view of wetland



06-WTL-S-18-wet Typical view of wetland



06-WTL-S-18-wet Typical view of wetland



06-WTL-S-18-wet Wetland soil core

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 16, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-18-upl
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 30%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.410526 Long: -77.435846 Datum: NAD-1983
 Soil Map Unit Name: Bourne fine sandy loam, 2 to 6 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland?	Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>		
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>		

Remarks: **Data point on hillslope north of WTL-14. Soils are well chained.**
Field Sheet: 17-B-WTL-14, up.

HYDROLOGY

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

Field Observations:		Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Surface water present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Water table present?	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe)	Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-18-upl**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Schedonorus arundinaceus	60	Y	FACU
2	Rubus spp.	20	Y	
3	Geranium carolinianum	10	N	
4				
5				
6				
7				
8				
9				
10				
11				

90 = Total Cover
 50% of total cover: **45** 20% of total cover: **18**

Woody Vine Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across all Strata: **2** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **0.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	0 x 1 = 0
FACW species	0 x 2 = 0
FAC species	0 x 3 = 0
FACU species	60 x 4 = 240
UPL species	0 x 5 = 0
Column totals	60 (A) 240 (B)

Prevalence Index = B/A = **4.00**

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 17, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-19-wet
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.408484 Long: -77.436707 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: **Wetland located within floodplain of Kingsland Creek. Wetland receives seep water from adjacent hillsides. Smilax rotundifolia dominates understory. Willow oak is dominant tree species. Soils are inundated.**
 Field Sheet: **17-B-WTL-15, wet.**

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	<u> </u> Surface Soil Cracks (B6)
<u>X</u> Surface Water (A1)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> True Aquatic Plants (B14)	<u> </u> Drainage Patterns (B10)
<u>X</u> High Water Table (A2)	<u> </u> Moss Trim Lines (B16)
<u>X</u> Saturation (A3)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Water Marks (B1)	<u> </u> Crayfish Burrows (C8)
<u> </u> Sediment Deposits (B2)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Drift Deposits (B3)	<u> </u> Stunted or Stressed Plants (D1)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Geomorphic Position (D2)
<u> </u> Iron Deposits (B5)	<u> </u> Shallow Aquitard (D3)
<u> </u> Inundation Visible on Aerial Imagery (B7)	<u> </u> Microtopographic Relief (D4)
<u>X</u> Water-Stained Leaves (B9)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Aquatic Fauna (B13)	

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0-2</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>3</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0-12</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
--	--

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

Remarks: **Soils inundated. Shallow surface water present in majority of wetland.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-19-wet**

Tree Stratum	(Plot Size: <u>30' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Quercus phellos</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>
2				
3				
4				
5				
6				
7				

50 = Total Cover

50% of total cover: 25 20% of total cover: 10

Sapling/Shrub Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Magnolia virginiana</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>
2	<u>Liquidambar styraciflua</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				
8				
9				

40 = Total Cover

50% of total cover: 20 20% of total cover: 8

Herb Stratum	(Plot Size: <u>5' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Smilax rotundifolia</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>
2	<u>Iris spp.</u>	<u>15</u>	<u>Y</u>	
3	<u>Carex spp.</u>	<u>10</u>	<u>N</u>	
4				
5				
6				
7				
8				
9				
10				
11				

75 = Total Cover

50% of total cover: 37.5 20% of total cover: 15

Woody Vine Stratum	(Plot Size: <u>15' diameter</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 80.00% (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:	
OBL species <u>0</u>	x 1 =	<u>0</u>
FACW species <u>30</u>	x 2 =	<u>60</u>
FAC species <u>110</u>	x 3 =	<u>330</u>
FACU species <u>0</u>	x 4 =	<u>0</u>
UPL species <u>0</u>	x 5 =	<u>0</u>
Column totals <u>140</u>	(A)	<u>390</u> (B)

Prevalence Index = B/A = 2.79

Hydrophytic Vegetation Indicators:

- 1 -Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is ≤3.0¹
- 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

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 ¹	Loc2		
0-4	2.5Y 3 / 1	100					sandy loam	fine
4-8	2.5Y 2.5 / 1	100					sandy loam	
8-15	2.5Y 2.5 / 1	100					sandy loam	fine

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histisol (A1)	<input checked="" 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"/> Piedmont Floodplain Soils (F19)	
<input checked="" 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 type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2 cm Mucky Mineral (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)		

³Indicators 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:

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-S-19-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	3	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	3	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	3	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	3	

Total Score 15

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-S-19-wet Typical view of wetland



06-WTL-S-19-wet Typical view of wetland



06-WTL-S-19-wet Typical view of wetland



06-WTL-S-19-wet Wetland soil



06-WTL-S-19-wet Typical view of adjacent upland



06-WTL-S-19-wet Upland soil core

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 17, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-19-upl
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 10%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.408402 Long: -77.436847 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Data point taken on a slight hillslope above WTL-15, within an old access road. Eastern red cedar is dominant understory species. Soils are a sandy loam and well drained. Field Sheet: 17-B-WTL-15, up.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-19-upl**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Quercus falcata	20	Y	FACU
2	Acer rubrum	20	Y	FAC
3	Liquidambar styraciflua	20	Y	FAC
4				
5				
6				
7				

60 = Total Cover
 50% of total cover: **30** 20% of total cover: **12**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Juniperus virginiana	50	Y	FACU
2	Liquidambar styraciflua	15	Y	FAC
3	Fagus grandifolia	5	N	FACU
4				
5				
6				
7				
8				
9				

70 = Total Cover
 50% of total cover: **35** 20% of total cover: **14**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Hedera helix	15	Y	FACU
2	Lonicera japonica	10	Y	FAC
3				
4				
5				
6				
7				
8				
9				
10				
11				

25 = Total Cover
 50% of total cover: **12.5** 20% of total cover: **5**

Woody Vine Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across all Strata: 7 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 57.14% (A/B)

Prevalence Index worksheet

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>65</u>	x 3 = <u>195</u>
FACU species <u>90</u>	x 4 = <u>360</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>155</u>	(A) <u>555</u> (B)

Prevalence Index = B/A = 3.58

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 17, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-20-wet
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.399179 Long: -77.443333 Datum: NAD-1983
 Soil Map Unit Name: Ochrepts and Udults, sloping NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: **Depressional wetland within powerline ROW. Soils are inundated with 1-2" of surface water present in some areas. Juncus effusus and Leersia oryzoides are dominant vegetation species. Soils are inundated.**
 Field Sheet: **17-B-WTL-16, wet.**

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>1</u>	
Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>15</u>	
Saturation present? (includes capillary fringe) Yes <u>X</u> No <u> </u> Depth (inches): <u>0-12</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils inundated.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-20-wet**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Leersia oryzoides	30	Y	OBL
2	Juncus effusus	20	Y	FACW
3	Saccharum alopecuroides	20	Y	FAC
4	Cares spp.	10	N	
5	Rosa multiflora	10	N	FACU
6	Lycopodiopsida spp.	5	N	
7				
8				
9				
10				
11				

95 = Total Cover

50% of total cover: **47.5** 20% of total cover: **19**

Woody Vine Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover

50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **3** (A)

Total Number of Dominant Species Across all Strata: **3** (B)

Percent of Dominant Species that are OBL, FACW, or FAC: **100.00%** (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species	30 x 1 = 30
FACW species	20 x 2 = 40
FAC species	20 x 3 = 60
FACU species	10 x 4 = 40
UPL species	0 x 5 = 0
Column totals	80 (A) 170 (B)

Prevalence Index = B/A = **2.13**

Hydrophytic Vegetation Indicators:

1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-S-20-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	3	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	2	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	0	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	2	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	2	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	1	

Total Score 10

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-S-20-wet Typical view of wetland



06-WTL-S-20-wet Typical view of wetland



06-WTL-S-20-wet Typical view of wetland



06-WTL-S-20-wet Wetland soil core



06-WTL-S-20-wet View of adjacent upland area



06-WTL-S-20-wet Upland soil core

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 17, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-20-upl
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 15%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.398497 Long: -77.443864 Datum: NAD-1983
 Soil Map Unit Name: Ochrepts and Udults, strongly sloping NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	

Remarks: **Data point taken on hillslope above WTL-16, near intersection of railroad and Brinkley Road. Soils are well drained.**
Field Sheet: 17-B-WTL-16, up.

HYDROLOGY

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

Field Observations:	
Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation present? (includes capillary fringe) Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Soils are well drained.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-20-upl**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				
6				
7				
8				
9				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Herb Stratum	(Plot Size: 5' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Setaria faberi	30	Y	UPL
2	Rubus spp.	25	Y	
3	Lonicera japonica	20	Y	FAC
4	Festuca spp.	20	Y	
5				
6				
7				
8				
9				
10				
11				

95 = Total Cover
 50% of total cover: **47.5** 20% of total cover: **19**

Woody Vine Stratum	(Plot Size: 15' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 25.00% (A/B)

Prevalence Index worksheet

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> 20 </u> x 3 = <u> 60 </u>
FACU species	<u> 0 </u> x 4 = <u> 0 </u>
UPL species	<u> 30 </u> x 5 = <u> 150 </u>
Column totals	<u> 50 </u> (A) <u> 210 </u> (B)

Prevalence Index = B/A = 4.20

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 17, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-21-wet
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.391015 Long: -77.451663 Datum: NAD-1983
 Soil Map Unit Name: Fluvaquents NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u> No <u> </u>	

Remarks: **Wetland is within the floodplain of Proctors Creek. The area has a slight downward slope to the creek. Wetland receives overflow flooding from creek and seep water from adjacent hillside. Standing water throughout wetland.**
Field Sheet: 17-B-WTL-17, wet.

HYDROLOGY

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

Field Observations:	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>3</u>	
Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>3</u>	
Saturation present? (includes capillary fringe) Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks: **Surface water present throughout wetland. Fish are present in some of the deeper surface water pools.**

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-21-wet**

Tree Stratum	(Plot Size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1	Quercus phellos	35	Y	FAC
2	Acer rubrum	15	Y	FAC
3	Betula nigra	15	Y	FACW
4	Pinus taeda	15	Y	FAC
5				
6				
7				

80 = Total Cover
 50% of total cover: **40** 20% of total cover: **16**

Sapling/Shrub Stratum	(Plot Size: 15' diameter)	15		
1	Magnolia virginiana	20	Y	FACW
2	Ilex opaca	15	Y	FACU
3	Acer rubrum	10	Y	FAC
4				
5				
6				
7				
8				
9				

45 = Total Cover
 50% of total cover: **22.5** 20% of total cover: **9**

Herb Stratum	(Plot Size: 5' diameter)			
1	Carex spp.	15	Y	
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

15 = Total Cover
 50% of total cover: **7.5** 20% of total cover: **3**

Woody Vine Stratum	(Plot Size: 15' diameter)			
1	none			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: **0** 20% of total cover: **0**

Dominance Test worksheet:

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

Total Number of Dominant Species Across all Strata: 8 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 75.00% (A/B)

Prevalence Index worksheet

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>75</u>	x 3 = <u>225</u>
FACU species <u>15</u>	x 4 = <u>60</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>125</u>	(A) <u>355</u> (B)

Prevalence Index = B/A = 2.84

Hydrophytic Vegetation Indicators:

 1 -Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 (1m) tall.

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

Woody vines - 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.)

WETLAND FUNCTIONS & VALUES FORM

Wetland I.D.: 06-WTL-S-21-wet

Project/Site: DC2RVA-Area 6

Function/Value	Score	Comments
Floodwater Alteration/Retention - Considers the effectiveness (wetland size, water capacity in wetland, location in watershed, wetland juxtaposition, etc.) of the wetland in reducing flood damage and the flow of floodwaters by attenuation of floodwaters for prolonged periods following precipitation events.	3	
Sediment, Nutrient, & Toxicant Removal - Considers the effectiveness (wetland configuration, vegetative cover, wetland size, etc.) of the wetland in reducing or preventing degradation of water quality by trapping sediments, excess nutrients, and toxicants.	3	
Erosion Control and Stabilization - Considers the effectiveness (vegetative cover, size, substrate, etc.) of the wetland in reducing erosion of stream channels or stream banks down gradient of the wetland, along shorelines if associated with a lake or tidally influenced water body, or within the wetland itself.	3	
Wildlife Habitat (Terrestrial) - Considers the effectiveness (wetland's size, connectivity with other habitats, wetland juxtaposition, human-caused disturbance, etc.) of the wetland to provide habitat for various types and populations of terrestrial animals.	3	
Wildlife Habitat (Aquatic) - Considers the effectiveness (wetland's size, substrate, water quality, wetland juxtaposition, human-caused disturbance, pollution, etc.) of the wetland to provide habitat for various types and populations of aquatic animals.	1	
Visual Quality/Aesthetics - Considers the visual and aesthetic qualities of the wetland.	3	

Total Score 16

Score	Potential to Provide Desirable Wetland Functions and Values
0	None
1	Poor
2	Low
3	Moderate
4	High
5	Very High



06-WTL-S-21-wet Manhole in wetland



06-WTL-S-21-wet Typical view of wetland



06-WTL-S-21-wet Typical view of wetland



06-WTL-S-21-wet Typical view of wetland



06-WTL-S-21-wet Typical view of wetland



06-WTL-S-21-wet Wetland soil core

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: DC2RVA-Area 6 City/County: Chesterfield Sampling Date: March 17, 2016
 Applicant/Owner: VDRPT State: VA Sampling Point: 06-WTL-S-21-upl
 Investigator(s): J. Budnick & K. Astroth Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 10%
 Subregion (LRR or MLRA): LRR: P, MLRA: 133A Lat: 37.392094 Long: -77.450658 Datum: NAD-1983
 Soil Map Unit Name: Tetotum loam, clayey substratum, 2 to 6 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of the year? Yes X No (If no, explain in Remarks.)
 Are vegetation , Soil , or Hydrology significantly disturbed? No Are "normal circumstances" present? Yes X No
 Are vegetation , Soil , or Hydrology naturally problematic? No (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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Data point on slight hillslope adjacent to old dirt access road. Soils are well drained. Field Sheet: 17-B-WTL-17, up.	

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: **06-WTL-S-21-upl**

Tree Stratum (Plot Size: <u>30' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Pinus taeda</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>
2	<u>Quercus alba</u>	<u>25</u>	<u>Y</u>	<u>FACU</u>
3	<u>Quercus rubra</u>	<u>15</u>	<u>N</u>	<u>FACU</u>
4	<u>Ilex opaca</u>	<u>10</u>	<u>N</u>	<u>FACU</u>
5				
6				
7				

90 = Total Cover
 50% of total cover: 45 20% of total cover: 18

Sapling/Shrub Stratum (Plot Size: <u>15' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Ilex opaca</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>
2	<u>Juniperus virginiana</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
3				
4				
5				
6				
7				
8				
9				

25 = Total Cover
 50% of total cover: 12.5 20% of total cover: 5

Herb Stratum (Plot Size: <u>5' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>Smilax rotundifolia</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2	<u>Pinus taeda</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>
3				
4				
5				
6				
7				
8				
9				
10				
11				

15 = Total Cover
 50% of total cover: 7.5 20% of total cover: 3

Woody Vine Stratum (Plot Size: <u>15' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1	<u>none</u>			
2				
3				
4				
5				

0 = Total Cover
 50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

Prevalence Index worksheet

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>55</u>	x 3 = <u>165</u>
FACU species <u>75</u>	x 4 = <u>300</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column totals <u>130</u>	(A) <u>465</u> (B)

Prevalence Index = B/A = 3.58

- Hydrophytic Vegetation Indicators:**
- 1 -Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 (1m) tall.

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

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

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

