Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Project: CHESTERFIELD - HOPEWELL 230KV REBUILD Stantec Applicant DOMINION ENERGY VIRGINIA Section/Township/Range: City/County: CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL Subregion (LRR or MLRA): LRR P VIRGINIA Start 37.344021° -77.392836° Investigator(s): B. YOUNG, C. NICE Terminus: 37.290017° -77.283916° Soil Map Unit Name: ORANGEBURG-FACEVILLE SANDY LOAMS Date 12/19/2017 Summary of Findings: UPLAND BETWEEN TOWERS 211/21 AND 211/22. Hydrophytic Vegetation is Present: Normal Circumstances: X NWI Classification N/A Hydric Soils are Present Disturbed Parameters (see Remarks) Local Relief CONCAVE Wetland Hydrology is Present Problematic Parameters (see Remarks): Landform SLOPE Sampled Area is within a Wetland: Atypical Climate/Hydrology (see Remarks) Slope % Hydrology Parameter: Primary Indicators: Secondary Indicators: Surface Soil Cracks (B6) Surface Water (A1) Sparsely Vegetated Concave Surface (B8) Water Stained Leaves (B9) High Water Table (A2) Drainage Patterns (B10) Aquatic Fauna (B13) Marl Deposits (B15) Moss Trim Lines (B16) Saturation (A3) Water Marks (B1) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Cravfish Burrows (C8) Drift Deposits (B3) Saturation Visible on Aerial Imagery (C9) Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Algal Mat or Crust (B4) Stunted or Stressed Plants (D1) Iron Deposits (B5) Thin Muck Surface (C7) Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) ____ Other Shallow Aquitard (D3) FAC-Neutral Test (D5) Sphagnum Moss (D8) Water Depths (inches): Remarks: HYDROLOGY PARAMETER NOT MET. Surface Water: Water Table: >20 Saturated soil: Vegetation Parameter: IND Stratum IND **Dominant Species** Stratum Non-Dominant Species Shrub Rubus argutus Dichanthelium scabriusculum Herbaceous Herbaceous FAC OBL 10 Andropogon virginicus Herbaceous FAC 25 10 Eupatorium capillifolium Herbaceous Solidago altissima Herbaceous FACU FACU % Dominant species FAC or wetter: Prevalence Index: NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST Calculated using all species present. Rapid Test for Hydrophytic Vegetation: Remarks: VEGETATION PARAMETER MET. Dominance Test >50%: Prevalence Index is < 3.0: Problematic Hydrophytic Vegetation: Soil Parameter: Matrix Redox Features Depth (inches) Color (Moist) 0/0 Color (Moist) 0/0 Type Loc Texture 0-12 10YR 5/3 98 7.5YR 5/6 M FINE SANDY LOAM 12-20 7.5YR 4/6 90 7.5YR 5/3 10 INCLUSION M CLAY LOAM Hydric Soil Indicators Histosol (A1) Coast Prairie Redox (A16) Redox Dark Surface (F6) Indicators for Problematic Hydric Soils Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Black Histic (A3) Sandy Gleyed Matrix (S4) Redox Depressions (F8) 1cm Muck (A9) Hydrogen Sulfide (A4) Sandy Redox (S5) Marl (F10) 2cm Muck (A10) Stratified Layers (A5) Stripped Matrix (S6) Depleted Ochric (F11) Reduced Vertic (F18) Organic Bodies (A6) Dark Surface (S7) Iron-Manganese Masses (F12) Piedmont Floodplain Soils (F19) 5cm Mucky Mineral (A7) Polyvalue Below Surface (S8) Umbric Surface (F13) Anomalous Bright Loamy Soils (F20) Muck Presence (A8) Thin Dark Surface (S9) Delta Ochric (F17) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) 1 cm Muck (A9) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Depleted Below Dark Surface (A Piedmont Floodplain Soils (F19) Loamy Gleyed Matrix (F2) Other Thick Dark Surface (A12) Anomalous Bright Loamy Soils (F20) Depleted Matrix (F3) SOIL PARAMETER NOT MET. Restrictive Layer (If Observed) Remarks: Type: Depth (inches):

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

CHESTERFIELD - HOPEWELL 230KV REBUILD Project: Stantec Section/Township/Range Applicant DOMINION ENERGY VIRGINIA City/County: CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL Subregion (LRR or MLRA): LRR P State VIRGINIA Start 37.344021° -77.392836° Investigator(s): B. YOUNG, C. NICE Terminus: 37.290017° -77.283916° Date 12/19/2017 Soil Map Unit Name: DUNBAR FINE SANDY LOAM Summary of Findings: UPLAND IN DEPRESSION NEAR LINE BYA. Hydrophytic Vegetation is Present: Normal Circumstances: X NWI Classification PFO1E Hydric Soils are Present Local Relief Disturbed Parameters (see Remarks): CONCAVE Wetland Hydrology is Present Problematic Parameters (see Remarks): Landform: DRAINAGEWAY Sampled Area is within a Wetland: Atypical Climate/Hydrology (see Remarks): Slope %: 0-3 **Hydrology Parameter:** Primary Indicators: Secondary Indicators: Surface Soil Cracks (B6) Surface Water (A1) Sparsely Vegetated Concave Surface (B8) Water Stained Leaves (B9) High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10) Saturation (A3) Marl Deposits (B15) Moss Trim Lines (B16) Water Marks (B1) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (C3) Sediment Deposits (B2) Crayfish Burrows (C8) Drift Deposits (B3) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) Iron Deposits (B5) Thin Muck Surface (C7) X Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) Other Shallow Aquitard (D3) FAC-Neutral Test (D5) Sphagnum Moss (D8) HYDROLOGY PARAMETER NOT MET. Water Depths (inches): Surface Water: Water Table: Saturated soil: >20 Vegetation Parameter: **Dominant Species** IND Non-Dominant Species Stratum Stratum Andropogon virginicus FAC 45 Eupatorium capillifolium Herbaceous FACU FACU Solidago altissima Herbaceous 10 Lespedeza cuneata Herbaceous FACU Phyllostachys aurea Herbaceous UPL % Dominant species FAC or wetter: 100% Prevalence Index: NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST Rapid Test for Hydrophytic Vegetation: VEGETATION PARAMETER MET. Dominance Test >50%: Prevalence Index is ≤ 3.0: Problematic Hydrophytic Vegetation: Soil Parameter: Matrix Redox Features Depth (inches) Color (Moist) Color (Moist) % % Type Loc Texture 0-20 10YR 6/3 85 10YR 6/1 15 D M CLAY LOAM Hydric Soil Indicators: Histosol (A1) Coast Prairie Redox (A16) Redox Dark Surface (F6) Indicators for Problematic Hydric Soils Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Black Histic (A3) Sandy Gleyed Matrix (S4) Redox Depressions (F8) 1cm Muck (A9) Hydrogen Sulfide (A4) Sandy Redox (S5) Marl (F10) 2cm Muck (A10) Stratified Layers (A5) Stripped Matrix (S6) Depleted Ochric (F11) Reduced Vertic (F18) Organic Bodies (A6) Dark Surface (S7) Iron-Manganese Masses (F12) Piedmont Floodplain Soils (F19) 5cm Mucky Mineral (A7) Polyvalue Below Surface (S8) Umbric Surface (F13) Anomalous Bright Loamy Soils (F20) Thin Dark Surface (S9) Delta Ochric (F17) Muck Presence (A8) Red Parent Material (TF2) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Very Shallow Dark Surface (TF12) Depleted Below Dark Surface (A Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) Other Thick Dark Surface (A12) Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) Restrictive Laver (If Observed) Remarks: SOIL PARAMETER NOT MET. Type: Depth (inches):

Sampling Point Number: 5

		DC	MINION ENE	RGY VIRGINIA		Section/Towns	ship/Range:		N/A	
				GE COUNTIES; CITY OF I	HOPEWELL	Subregion (LRR			LRR	
*******	State:tigator(s):		B. YOUNG				Start:		344021° -7	
Invest	Date:		B. YOUNG			Soil Man	Terminus: Unit Name:		290017° -7	ANDY LOAN
			12/12/					20115		
nary of Findings:	vegetation is Present:	x			D BELOW FL		'I Classificatio	n:	PFO1	E
	ydric Soils are Present:			Disturbed Parameters (s			Local Relie		CONCA	
	d Hydrology is Present:			Problematic Parameters (s			Landforn		DRAINAG	
Sampled Are	a is within a Wetland:	X	Atyp	ical Climate/Hydrology (s	see Remarks):		Slope 9	Vo:	1-2	
ology Parameter:		mary Indicate						condary Indic		
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)		Water Staine Aquatic Faur Marl Deposi Hydrogen St Oxidized Rh Presence of	ed Leaves (B9 na (B13) ts (B15) ulfide Odor (C izospheres on Reduced Iron	C1) a Living Roots (C3)			Surface Soil of Sparsely Veg Drainage Patt Moss Trim L Dry-Season V Crayfish Burt Saturation Vi	Cracks (B6) vetated Concavterns (B10) ines (B16) Water Table (C	e Surface	
Iron Deposits (B5) Inundation Visible on A		Thin Muck S Other	urface (C7)			<u> </u>	Geomorphic Shallow Aqu FAC-Neutral	itard (D3)		
							Sphagnum M	loss (D8)		
ater Depths (inches): Surface Water: Water Table: Saturated soil:				Remarks: HYDROL	OGY PARAM	ETER MET.				
ation Parameter:										
Dominan	t Species	Stratum	IND	%		inant Species		Stratum	IND	%
Pinus		Shrub	FAC	3		on virginicus		Herbaceous	FAC	5
Juncus e Symphyotrick		Herbaceou Herbaceou		35 20		m scabriusculum s argutus		Herbaceous Herbaceous	OBL FAC	5 5
% Dominant	species FAC or wetter	100%	1			Preval	ence Index:	1.9		
NOTE: SPECIES INDICAT	species FAC or wetter:		AL WETLAND			Calculated using	ence Index:	1.9 nt.		
NOTE: SPECIES INDICAT Rapid Test for Hydrophyti Dominanc Prevalence I Problematic Hydrophyti	FOR STATUS ACCORDING TO Vegetation: the Test >50%: X and the X is ≤ 3.0 : X		GAL WETLAND		TION PARAM	Calculated using	_			
NOTE: SPECIES INDICAT Rapid Test for Hydrophyti Dominanc Prevalence I	ror status according to Vegetation: the Test >50%: the X the set in the Set i		IAL WETLAND		TION PARAM	Calculated using	_			
NOTE: SPECIES INDICAT Rapid Test for Hydrophyti Dominanc Prevalence I Problematic Hydrophyti	OR STATUS ACCORDING to Vegetation: the Test >50%: X undex is ≤ 3.0: X to Vegetation: M Color (Mois	TO 2016 NATION	%			Calculated using	_		Textu	
NOTE: SPECIES INDICAT Rapid Test for Hydrophyti Dominane Prevalence I Problematic Hydrophyti arameter: Depth (inches) 0-1	OR STATUS ACCORDING ic Vegetation: te Test >50%: Nodex is ≤ 3.0: X ic Vegetation: Note Vegetation: Note Vegetation 10 YR 4/1	TO 2016 NATION	% 100	Remarks: VEGETA' Color (Moist)	Redox Feat	Calculated using IETER MET. Ires Type	all species presed		LOAN	Л
NOTE: SPECIES INDICAT Rapid Test for Hydrophyti Dominanc Prevalence I Problematic Hydrophyti arameter: Depth (inches) 0-1 1-12	OR STATUS ACCORDING ic Vegetation: the Test >50%: X ndex is ≤ 3.0: X ic Vegetation: Color (Mois 10YR 4/1 2.5Y 6/1	TO 2016 NATION	% 100 98	Remarks: VEGETA Color (Moist) 7.5YR 5/8	Redox Featu	Calculated using IETER MET. ITES Type C	Loc PL		LOAN CLAY LO	AM
NOTE: SPECIES INDICAT Rapid Test for Hydrophyti Dominane Prevalence I Problematic Hydrophyti arameter: Depth (inches) 0-1	OR STATUS ACCORDING ic Vegetation: te Test >50%: Nodex is ≤ 3.0: X ic Vegetation: Note Vegetation: Note Vegetation 10 YR 4/1	TO 2016 NATION	% 100	Remarks: VEGETA' Color (Moist)	Redox Feat	Calculated using IETER MET. Ires Type	all species presed		LOAN	AM
NOTE: SPECIES INDICAT Rapid Test for Hydrophyti Dominanc Prevalence I Problematic Hydrophyti arameter: Depth (inches) 0-1 1-12	OR STATUS ACCORDING ic Vegetation: the Test >50%: X ndex is ≤ 3.0: X ic Vegetation: Color (Mois 10YR 4/1 2.5Y 6/1	TO 2016 NATION	% 100 98	Remarks: VEGETA Color (Moist) 7.5YR 5/8	Redox Featu	Calculated using IETER MET. ITES Type C	Loc PL		LOAN CLAY LO	AM
NOTE: SPECIES INDICAT Rapid Test for Hydrophyti Dominane Prevalence I Problematic Hydrophyti arameter: Depth (inches) 0-1 1-12 12-20 vdric Soil Indicators:	No.	TO 2016 NATION	% 100 98 85	Color (Moist) 7.5YR 5/8 7.5YR 5/8	Redox Feature 9%	Calculated using IETER MET. ITES Type C	Loc PL M	ett.	LOAN CLAY LO	A DAM DAM
NOTE: SPECIES INDICAT Rapid Test for Hydrophyti Dominanc Prevalence I Problematic Hydrophyti arameter: Depth (inches) 0-1 1-12 12-20	Coast Pr. Sandy M. Stripped Dark Sur P. Polyvalu Thin Dar Loamy M.	TO 2016 NATION	% 100 98 85 A16) (S1) (S4)	Remarks: VEGETA Color (Moist) 7.5YR 5/8 7.5YR 5/8 Redox Dar Depleted D Redox Depl Marl (Flo) Depleted C Iron-Mang Umbric Su Delta Ochr Reduced V	Redox Feature 96 15 15 15 15 15 15 15 15 15 15 15 15 15	Calculated using IETER MET. Type C C C	Loc PL M		LOAN CLAY LC CLAY LC CLAY LC (A9) (A10) ertic (F18) lloodplain : Bright Lo Material (ADAM DAM DAM Jydric Soils Soils (F19) amy Soils (F172)

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

	Project:	CUESTEI	PEIELD HOPE	WELL 230KV REBUILD						
Stantec A	applicant:			ERGY VIRGINIA		Section/Tov	wnship/Range:		N/A	
City		FIELD AND		GE COUNTIES; CITY OF HO	OPEWELL	Subregion (LR	RR or MLRA):		LRR P	
Invest	State:igator(s):		B. YOUNG				Start: Terminus:		.344021° -77.39: .290017° -77.28:	
*********	Date:		12/19/			Soil Ma	ap Unit Name:		ILLE BOURNE	
- CPI II.		-		THE CIVIL CI						
Summary of Findings:	Vegetation is Present	t: X		WETLAND SW Normal Cir	ALE BELOV reumstances:		-7'. NWI Classificat	fion:	N/A	
	ydric Soils are Present			Disturbed Parameters (se			Local Re		CONCAVE	
Wetland	l Hydrology is Present	t: X		Problematic Parameters (se	ee Remarks):		Landfo	orm: D	DRAINAGEW.	
	a is within a Wetland	: X	Atypi	ical Climate/Hydrology (se	e Remarks):		Slope	e %:	2-5	
Hydrology Parameter:	Pr	imary Indica	itors:				5	Secondary Indica	entors:	
		mary same	10/31			_	Surface Soi	il Cracks (B6)		
Surface Water (A1)	_	_	ned Leaves (B9))		_		egetated Concav	e Surface (B8))
High Water Table (A2) Saturation (A3)	-	_Aquatic Fau Marl Depos				_		atterns (B10) Lines (B16)		
Water Marks (B1)	_	Hydrogen S	Sulfide Odor (C			_	Dry-Season	n Water Table (C	22)	
Sediment Deposits (B2) Drift Deposits (B3)	_		hizospheres on Reduced Iron	Living Roots (C3)		-		urrows (C8) Visible on Aeria	1 Imagani (CO	
Algal Mat or Crust (B4)	_			Tilled Soils (C6)				Stressed Plants (,
Iron Deposits (B5)		Thin Muck	Surface (C7)			_	X Geomorphi	ic Position (D2)		
Inundation Visible on A	erial Imagery (B7)	_Other				-	X FAC-Neutra	quitard (D3)		
						_	Sphagnum 1			
Water Depths (inches):				Remarks: HYDROLO	GY PARAM	ETER MET.				
Surface Water: Water Table:										
Saturated soil:										
Vegetation Parameter:										
Dominant	Species	Stratum	ı IND	9/0	Non-Dom	ninant Species		Stratum	IND	%
Rubus a Dichanthelium s	rgutus	Herbaceo	us FAC	10 10		us effusus		Herbaceous		5
Dichanthelium	n scoparium	Herbaceon	us FACW	10						
Smilax rote Lonicera j		Vine Vine	FAC FACU	5 3						
	apoeu									
							-			
	species FAC or wetter:					Prev	valence Index:	2.1		
	OR STATUS ACCORDING	TO 2016 NATIO	NAL WETLAND	·			ing all species pre	sent.		
Rapid Test for Hydrophyti Dominanc	c Vegetation: e Test >50%: X	-		Remarks: VEGETAT	ION PARAM	ETER MET.				
	ndex is ≤ 3.0 : X	-								
Problematic Hydrophytic	vegetation:	-								
Soil Parameter:										
DALES OF CHARLES	1	Matrix			Redox Featu	ıres		September 1		THE STREET
Depth (inches)	Color (Mois		%	Color (Moist)	%	Туре	Loc		Texture	
0-3 3-6	10YR 3/1 2.5Y 4/1		100 75	10YR 6/3	20	С	M		LOAM SANDY LOAM	M
5-0	E. V 1 7		13	10YR 5/8	5	C	M		SAND1 LOIL	.VI
6-20	10YR 6/1		70	10YR 5/6	20	С	M		CLAY LOAM	Л
II. dele Call Indicators:				10YR 5/2	10 1	INCLUSION	M			
Hydric Soil Indicators: Histosol (A1)	Coast Pr	rairie Redox ((A16)	Redox Dark	Surface (F6)		In	ndicators for Pro	hlematic Hydr	ric Soils
Histic Epipedon (A2)	Sandy N	Aucky Minera	al (S1)		rk Surface (F7	7)				16 50115
Black Histic (A3)		Gleyed Matrix	(S4)	Redox Depre	essions (F8)			lem Muck (
Hydrogen Sulfide (A4) Stratified Layers (A5)		ledox (S5) Matrix (S6)		Marl (F10) Depleted Oc	hric (F11)		-	2cm Muck (Reduced Ve		
Organic Bodies (A6)		rface (S7)			nese Masses (F	F12)	1 7		loodplain Soils	s (F19)
5cm Mucky Mineral (A7		ue Below Sur		Umbric Surfa					Bright Loamy	
Muck Presence (A8) 1 cm Muck (A9)		rk Surface (S Mucky Miner		Delta Ochric Reduced Ver			-		Material (TF2) ow Dark Surface	
Depleted Below Dark Su		Gleyed Matrix			oodplain Soils	(F19)	-	Other	W Dark Surfac	æ (1112)
Thick Dark Surface (A12		d Matrix (F3)			Bright Loamy		1 -			
P				In the south of the	ATETED ME	DAD				
Restrictive Layer (If Obs. Type:	rvea)			Remarks: SOIL PARA	AMETER ME	51.				
Donth (inches):										

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

CHESTERFIELD - HOPEWELL 230KV REBUILD Project: Stantec Section/Township/Range: Applicant DOMINION ENERGY VIRGINIA Subregion (LRR or MLRA): City/County: CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL LRR P State VIRGINIA Start 37.344021° -77.392836° Investigator(s): B. YOUNG, C. NICE Terminus 37.290017° -77.283916° Date: 12/19/2017 Soil Map Unit Name: OCHREPTS AND UDULTS, STEEP Summary of Findings: WETLAND BELOW FLAG 'BYC-7'. Hydrophytic Vegetation is Present: Normal Circumstances: X NWI Classification: N/A Hydric Soils are Present: Disturbed Parameters (see Remarks): Local Relief CONCAVE Wetland Hydrology is Present: Landform: Problematic Parameters (see Remarks): DRAINAGEWAY Sampled Area is within a Wetland: Atypical Climate/Hydrology (see Remarks): Slope % 4-6 **Hydrology Parameter:** Primary Indicators: Secondary Indicators. Surface Soil Cracks (B6) Surface Water (A1) Water Stained Leaves (B9) Sparsely Vegetated Concave Surface (B8) High Water Table (A2) Drainage Patterns (B10) Aquatic Fauna (B13) X Saturation (A3) Marl Deposits (B15) Moss Trim Lines (B16) Hydrogen Sulfide Odor (C1) Water Marks (B1) Dry-Season Water Table (C2) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Crayfish Burrows (C8) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) Iron Deposits (B5) Thin Muck Surface (C7) X Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) Shallow Aquitard (D3) X FAC-Neutral Test (D5) Sphagnum Moss (D8) Water Depths (inches): HYDROLOGY PARAMETER MET. Surface Water: Water Table: Saturated soil: Vegetation Parameter: **Dominant Species** Stratum IND % Non-Dominant Species Stratum IND Liquidambar styraciflua Shrub FAC Carex lurida Herbaceous OBL Juncus effusus Herbaceous OBL 45 Eupatorium capillifolium Herbaceous FACU Scirpus cyperinus Dichanthelium scoparium Herbaceous OBI. 15 15 Rubus argutus Herbaceous FAC Herbaceous FACW % Dominant species FAC or wetter: 100% Prevalence Index: NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST Rapid Test for Hydrophytic Vegetation Remarks: VEGETATION PARAMETER MET. Dominance Test >50%: Prevalence Index is ≤ 3.0 : Problematic Hydrophytic Vegetation: Soil Parameter: Matrix Redox Features Color (Moist) Depth (inches) Color (Moist) Type % Loc Texture 0 - 110YR 5/2 98 10YR 3/8 M SANDY CLAY LOAM 1-13 10YR 5/1 95 10YR 5/8 M LOAMY SAND 95 LOAMY SAND 13-20 2.5Y 6/1 10YR 5/8 M Hydric Soil Indicators: Redox Dark Surface (F6) Histosol (A1) Coast Prairie Redox (A16) Indicators for Problematic Hydric Soils Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Black Histic (A3) Sandy Gleyed Matrix (S4) Redox Depressions (F8) 1cm Muck (A9) Hydrogen Sulfide (A4) X Sandy Redox (S5) Marl (F10) 2cm Muck (A10) Stratified Layers (A5) Stripped Matrix (S6) Depleted Ochric (F11) Reduced Vertic (F18) Organic Bodies (A6) Dark Surface (S7) Iron-Manganese Masses (F12) Piedmont Floodplain Soils (F19) 5cm Mucky Mineral (A7) Polyvalue Below Surface (S8) Umbric Surface (F13) Anomalous Bright Loamy Soils (F20) Muck Presence (A8) Thin Dark Surface (S9) Delta Ochric (F17) Red Parent Material (TF2) 1 cm Muck (A9) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Very Shallow Dark Surface (TF12) Depleted Below Dark Surface (A Piedmont Floodplain Soils (F19) Loamy Gleyed Matrix (F2) Other Thick Dark Surface (A12) Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) Restrictive Layer (If Observed) Remarks: SOIL PARAMETER MET. Type: Depth (inches):

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Project: CHESTERFIELD - HOPEWELL 230KV REBUILD Stantec) Section/Township/Range: Applicant: DOMINION ENERGY VIRGINIA Subregion (LRR or MLRA): City/County: CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL LRR P State VIRGINIA Start 37.344021° -77.392836° Investigator(s): B. YOUNG, C. NICE Terminus: 37.290017° -77.283916° Date: 12/19/2017 Soil Map Unit Name: OCHREPTS AND UDULTS, STEEP Summary of Findings: UPLAND ABOVE FLAG 'BYC-7' Hydrophytic Vegetation is Present: Normal Circumstances: X NWI Classification: N/A Hydric Soils are Present: Disturbed Parameters (see Remarks): Local Relief CONVEX Wetland Hydrology is Present: Landform: Problematic Parameters (see Remarks): SLOPE Sampled Area is within a Wetland: Atypical Climate/Hydrology (see Remarks): Slope % 4-6 Hydrology Parameter: Primary Indicators: Secondary Indicators: Surface Soil Cracks (B6) Surface Water (A1) Water Stained Leaves (B9) Sparsely Vegetated Concave Surface (B8) High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10) Saturation (A3) Marl Deposits (B15) Moss Trim Lines (B16) Water Marks (B1) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Crayfish Burrows (C8) Drift Deposits (B3) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) Iron Deposits (B5) Thin Muck Surface (C7) Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) Shallow Aquitard (D3) FAC-Neutral Test (D5) X Sphagnum Moss (D8) Water Depths (inches): HYDROLOGY PARAMETER NOT MET. Surface Water: Water Table: Saturated soil: >20 Vegetation Parameter: **Dominant Species** Stratum IND % Non-Dominant Species Stratum IND Andropogon virginicus Herbaceous FAC Lycopodium clavatum Herbaceous FAC Rubus argutus Eupatorium capillifolium Herbaceous FACU 15 % Dominant species FAC or wetter: 50% Prevalence Index: NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST Rapid Test for Hydrophytic Vegetation: Remarks: VEGETATION PARAMETER NOT MET. Dominance Test >50% Prevalence Index is ≤ 3.0 : Problematic Hydrophytic Vegetation: Soil Parameter: Matrix Redox Features Color (Moist) Color (Moist) Depth (inches) % Loc Texture 10YR 4/3 100 0-8 SANDY LOAM 8-20 2.5Y 6/6 100 SANDY LOAM Hydric Soil Indicators: Redox Dark Surface (F6) Coast Prairie Redox (A16) Histosol (A1) Indicators for Problematic Hydric Soils Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Black Histic (A3) Sandy Gleyed Matrix (S4) Redox Depressions (F8) 1cm Muck (A9) Hydrogen Sulfide (A4) Sandy Redox (S5) Marl (F10) 2cm Muck (A10) Stratified Layers (A5) Stripped Matrix (S6) Depleted Ochric (F11) Reduced Vertic (F18) Organic Bodies (A6) Dark Surface (S7) Iron-Manganese Masses (F12) Piedmont Floodplain Soils (F19) 5cm Mucky Mineral (A7) Polyvalue Below Surface (S8) Umbric Surface (F13) Anomalous Bright Loamy Soils (F20) Muck Presence (A8) Thin Dark Surface (S9) Delta Ochric (F17) Red Parent Material (TF2) 1 cm Muck (A9) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Very Shallow Dark Surface (TF12) Depleted Below Dark Surface (A Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) Other Thick Dark Surface (A12) Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) SOIL PARAMETER NOT MET. Restrictive Layer (If Observed) Type: Depth (inches):

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

CHESTERFIELD - HOPEWELL 230KV REBUILD Project: Stantec Section/Township/Range: Applicant: DOMINION ENERGY VIRGINIA Subregion (LRR or MLRA): City/County: CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL LRR P State VIRGINIA Start 37.344021° -77.392836° Investigator(s): B. YOUNG, C. NICE Terminus 37.290017° -77.283916° Soil Map Unit Name: Date: OCHREPTS AND UDULTS, STEEF Summary of Findings: UPLAND ABOVE FLAG 'BYD-11'. Hydrophytic Vegetation is Present: Normal Circumstances: X NWI Classification: X N/A Hydric Soils are Present: Disturbed Parameters (see Remarks): Local Relief CONCAVE Landform Wetland Hydrology is Present: Problematic Parameters (see Remarks): DRAINAGEWAY Sampled Area is within a Wetland: Atypical Climate/Hydrology (see Remarks): Slope % 4-6 Hydrology Parameter: Primary Indicators: Secondary Indicators. Surface Soil Cracks (B6) Surface Water (A1) Water Stained Leaves (B9) Sparsely Vegetated Concave Surface (B8) High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10) Marl Deposits (B15) Saturation (A3) Moss Trim Lines (B16) Water Marks (B1) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Crayfish Burrows (C8) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) Iron Deposits (B5) Thin Muck Surface (C7) X Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) Other Shallow Aquitard (D3) X FAC-Neutral Test (D5) Sphagnum Moss (D8) Water Depths (inches): HYDROLOGY PARAMETER MET. Remarks: Surface Water: Water Table: Saturated soil: >20 Vegetation Parameter: **Dominant Species** IND % Non-Dominant Species Stratum IND Stratum Liquidambar styraciflua Shrub FAC 10 Herbaceous FACU Juncus effusus Herbaceous OBL Solidago rugosa Herbaceous 20 FAC 3 Schedonorus arundinaceus Herbaceous FAC 15 Rubus argutus Herbaceous FAC Eupatorium capillifolium Herbaceous FACU % Dominant species FAC or wetter: Prevalence Index: 100% NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST Calculated using all species present Rapid Test for Hydrophytic Vegetation: VEGETATION PARAMETER MET. Remarks: Dominance Test >50%: Prevalence Index is ≤ 3.0 : Problematic Hydrophytic Vegetation: Soil Parameter: Matrix Redox Features Color (Moist) Color (Moist) % Depth (inches) Type Loc Texture 0-1 10YR 3/3 100 SANDY LOAM 1-20 7.5YR 6/8 100 SANDY CLAY LOAM Hydric Soil Indicators: Histosol (A1) Coast Prairie Redox (A16) Redox Dark Surface (F6) Indicators for Problematic Hydric Soils Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Black Histic (A3) Sandy Gleyed Matrix (S4) Redox Depressions (F8) 1cm Muck (A9) Hydrogen Sulfide (A4) Sandy Redox (S5) Marl (F10) 2cm Muck (A10) Stratified Layers (A5) Stripped Matrix (S6) Depleted Ochric (F11) Reduced Vertic (F18) Organic Bodies (A6) Dark Surface (S7) Iron-Manganese Masses (F12) Piedmont Floodplain Soils (F19) 5cm Mucky Mineral (A7) Polyvalue Below Surface (S8) Umbric Surface (F13) Anomalous Bright Loamy Soils (F20) Muck Presence (A8) Thin Dark Surface (S9) Delta Ochric (F17) Red Parent Material (TF2) Reduced Vertic (F18) Very Shallow Dark Surface (TF12) 1 cm Muck (A9) Loamy Mucky Mineral (F1) Depleted Below Dark Surface (A Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) Other Thick Dark Surface (A12) Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) Restrictive Layer (If Observed) Remarks: SOIL PARAMETER NOT MET. Type: Depth (inches):

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

	Project:	CHESTER	RFIELD - HOPE	EWELL 230KV	V REBUILD						
	Applicant:		OMINION EN					ownship/Range:		N/A	
Cit	V/County: CHESTERI State:	FIELD AND I		GE COUNTIE	S; CITY OF HOPE	WELL	Subregion (L	RR or MLRA): Start:		LRR I	
Inves	tigator(s):						•	Terminus:		.290017° -77	
	Date:			0/2017			Soil N	Map Unit Name:			DULTS, STEEP
Summary of Findings:					WETLAND BE	LOW F	LAG 'BYD-11'.				
Hydrophyti	c Vegetation is Present:				Normal Circun	nstances:	X	NWI Classifica		PSS10	
	ydric Soils are Present:			Disturbed I	Parameters (see R	emarks):		Local Re	_	CONCA	
	d Hydrology is Present: a is within a Wetland:				Parameters (see R Hydrology (see R			Landf	orm:1 ne %:	DRAINAGI 4-6	EWAY
Hydrology Parameter:	a is within a vectand.	A	ruyp	near Cimiate/i	rrydrology (see R	cinarks).		отор	C 70.	4-0	
	Pri	mary Indica	tors:						Secondary Indic	cators:	
Surface Water (A1) High Water Table (A2) X Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on A		Aquatic Far Marl Depos Hydrogen S Oxidized R Presence of Recent Iron		C1) n Living Root n (C4)				Sparsely V Drainage I Moss Trin Dry-Seaso Crayfish E Saturation Stunted or X Geomorph Shallow A X FAC-Neut		C2) al Imagery ((D1)	
Water Depths (inches):				Remarks:	HYDROLOGY	PARA	METER MET.	Sphagnum	Moss (D8)		
Surface Water:											
Water Table: Saturated soil:											
Vegetation Parameter:	0										
regetation ranameter.											
Dominan		Stratum Shrub		5			minant Species ium scabriusculu		Stratum Herbaceous	IND	%
Liquidambar Juncus		Herbaceo	us FAC OBL	30	Die		um scaoriuscum lago rugosa	ım	Herbaceous	OBL FAC	5 5
Carex	lurida	Herbaceo	us OBL	15		Scirp	us cyperinus		Herbaceous	OBL	5
% Dominant	species FAC or wetter:	100%					Pr	evalence Index:	1.3		
	OR STATUS ACCORDING		ONAL WETLAND	PLANT LIST				using all species pr			
Rapid Test for Hydrophyt				Remarks:	VEGETATION	N PARA	METER MET.				
	te Test >50%: X			1							
Problematic Hydrophyt	ndex is ≤ 3.0: X										
Troblematic Trydrophyt	e regention.										
Soil Parameter:											
Donth (inch-s)	Color (Mois	latrix	%	C-1	(Moist)	edox Fea		Loc	ST CONTRACTOR	Tout	1 E E E E E E E E E
Depth (inches) 0-3	2.5Y 6/2	.,	80		YR 6/8	15	Type C	M		CLAY LO	
					YR 6/6	5	C	PL			
3-8	10YR 7/8		90		YR 6/1	10	D	M		NDY CLAY	
8-20	10YR 6/1		85	10Y	YR 6/8	15	С	M	SAI	NDY CLAY	Y LOAM
Hydric Soil Indicators:											
Histosol (A1)	Coast Pra	airie Redox ((A16)		Redox Dark Sur			I.	ndicators for Pre	oblematic E	lydric Soils
Histic Epipedon (A2)		ucky Minera			_Depleted Dark S		F7)			And the second	
Black Histic (A3) Hydrogen Sulfide (A4)		leyed Matrix edox (S5)	. (S4)	_	Redox Depression Marl (F10)	ons (F8)			lcm Muck 2cm Muck		
Stratified Layers (A5)		Matrix (S6)		2	Depleted Ochric	(F11)			Reduced V		
Organic Bodies (A6)	Dark Sur			-	Iron-Manganese		(F12)			Floodplain S	Soils (F19)
5cm Mucky Mineral (A		e Below Sur			Umbric Surface						amy Soils (F20)
Muck Presence (A8)		k Surface (S			Delta Ochric (F)					Material (7	
1 cm Muck (A9) Depleted Below Dark St		lucky Miner leyed Matri		19	Reduced Vertic Piedmont Flood		ls (F10)		Other	ow Dark Su	rface (TF12)
Thick Dark Surface (A1		realities are conserved		7	Anomalous Brig				Other		
		(-5)		To .							
Restrictive Layer (If Obs Type:	served)			Remarks:	SOIL PARAM	ETER N	IEI.				
Depth (inches):											

Sampling Point Number: 11

(Stanta	Project:			ELL 230KV REBUILD				
Stantec	Applicant: City/County: CHESTER			GY VIRGINIA	ODEWELL		wnship/Range: RR or MLRA):	N/A LRR P
	State:	CFIELD AND PRINC	VIRGIN		IOPEWELL	Subregion (Li	Start:	37.344021° -77.392836°
	Investigator(s):	В					Terminus:	
	Date:		12/19/20	17		Soil M	ap Unit Name:	
ummary of Findings:				UPLAND	WEST OF	RVF' LINE		
	phytic Vegetation is Presen	t:			rcumstances:		NWI Classification:	N/A
	Hydric Soils are Presen		I	Disturbed Parameters (s			Local Relief:	
W	etland Hydrology is Presen	t:		oblematic Parameters (se			Landform:	FLAT
Sample	d Area is within a Wetland	l:	Atypica	l Climate/Hydrology (se	ee Remarks):		Slope %:	0-1
ydrology Parameter:								
	Pi	imary Indicators:						ndary Indicators:
Surface Water (A1)	Water Stained Le	aves (R9)			-	Surface Soil Cr	acks (B6) ated Concave Surface (B8)
High Water Table	·	Aquatic Fauna (B			- 4		Drainage Patter	
Saturation (A3)		Marl Deposits (B				-	Moss Trim Lin	
Water Marks (B1)		Hydrogen Sulfide				_	Dry-Season Wa	
Sediment Deposits	(B2)	Oxidized Rhizosp	oheres on L	iving Roots (C3)			Crayfish Burro	ws (C8)
Drift Deposits (B3)	Presence of Redu	ced Iron (C	(4)			Saturation Visi	ble on Aerial Imagery (C9)
Algal Mat or Crus	(B4)	Recent Iron Redu	ction in Til	led Soils (C6)		_	Stunted or Stres	ssed Plants (D1)
Iron Deposits (B5)	_	_ Thin Muck Surface	ce (C7)			_	X Geomorphic Po	sition (D2)
Inundation Visible	on Aerial Imagery (B7)	Other					Shallow Aquita	
						_	FAC-Neutral T	Control of the Contro
			T-				Sphagnum Mos	s (D8)
Water Depths (inches):			R	demarks: HYDROLO	OGY PARA	METER NOT M	ET.	
Surface V								
Water 7								
getation Parameter:	I soil: >20							
getation Parameter:								
Don	inant Species	Stratum	IND	%	Non-Do	minant Species		Stratum IND %
	iria sanguinalis	Herbaceous	FACU	50	Eupatorii	ım capillifolium	He	erbaceous FACU 3
							•	
	inant species FAC or wetter					Pre	valence Index:	4.0
	DICATOR STATUS ACCORDING	TO 2016 NATIONAL W					sing all species present.	
Rapid Test for Hydro	ophytic Vegetation:	_	R	emarks: VEGETAT	TON PARA!	METER NOT M	IET.	
Don	inance Test >50%:	_						
Prevale	ence Index is ≤ 3.0 :							
Problematic Hydro	ophytic Vegetation:	=						
Parameter:	BIALES .				D. I. F.			
Double (in sheet)		Matrix	0/	Color (Moist)	Redox Fea		Loc	ACMINING CONTRACTOR
Depth (inches)	Color (Moi 2.5Y 4/2		%	Color (Moist)	70	Туре	Loc	Texture
0-2			100	7.5370.476	-		.,	SANDY LOAM
2-5	2.5Y 4/1		98	7.5YR 4/6	2	С	M	FINE SANDY LOAM
5-20	2.5Y 6/3	l	100		-			FINE SANDY CLAY LOAN
			-					
Hydric Soil Indicators:								
Histosol (A1)	Coast D	rairie Redox (A16)		Padov Doels	Surface (F6)		India	ntors for Problematic Hydric Soil:
Histic Epipedon (A		Mucky Mineral (S1)			ark Surface (F6)		maica	joi i rootemune Hyuric 3011
Black Histic (A3)		Gleved Matrix (S4)		Redox Depr		.7		1cm Muck (A9)
Hydrogen Sulfide (Redox (S5)		Marl (F10)	cosions (F6)			2cm Muck (A10)
Stratified Layers (A		d Matrix (S6)		Depleted Oc	ehrio (E11)			Reduced Vertic (F18)
Organic Bodies (A		irface (S7)			nese Masses	(F12)		Piedmont Floodplain Soils (F19)
			(82)			(* 12)		
5cm Mucky Miner		ue Below Surface (S	56)	Umbric Surf				Anomalous Bright Loamy Soils (
Muck Presence (A)		ark Surface (S9)	v	Delta Ochri				Red Parent Material (TF2)
1 cm Muck (A9)		Mucky Mineral (F1		Reduced Ve		(F10)		Very Shallow Dark Surface (TF1
Depleted Below Da		Gleyed Matrix (F2)			loodplain Soil		_	Other
Thick Dark Surface	(A12) X Deplete	d Matrix (F3)		Anomalous	Bright Loamy	Soils (F20)		
Destrict Ton	(Charmed)		- In	emedia. COII D:D	AMETER	ET		
Restrictive Layer (R	emarks: SOIL PAR	AMETER M	E1.		
Depth (inc	Type:							
Depth (inc	nes).							

Sampling Point Number: 12

O Chambre	Project:		FIELD - HOPE				0 / / / / / / / / / / / / / / / / /	1: //			
	pplicant:		OMINION ENE			PEWELL		wnship/Range: _ RR or MLRA):		N/A LRR I	P
	State:		VIRG							.344021° -7	
Invest	gator(s):		B. YOUNG					Terminus:	37	.290017° -7	7.283916°
	Date:		12/19/	2017			Soil M	Iap Unit Name: _		FLUVAQU	IENTS
nmary of Findings:					WETLAND	BELOW FL	AG 'BYH-13'.				
	Vegetation is Present				Normal Circ			NWI Classificati		N/A	
	dric Soils are Present				Parameters (see			Local Rel		NON	
	Hydrology is Present is within a Wetland				Parameters (see Hydrology (see		_	Landfo Slope		FLAT	
drology Parameter:	is within a wetland	. A	Atyp	icai Ciimate	e/Hydrology (see	Remarks).		Stope	70.	0-2	
B)	Pri	imary Indica	tors:					S	econdary Indic	cators:	
		800 3 0	200						Cracks (B6)		
Surface Water (A1)	-	Aquatic Fa	ned Leaves (B9)					egetated Conca atterns (B10)	ve Surface	(B8)
High Water Table (A2) Saturation (A3)	-	Marl Depos						Moss Trim			
Water Marks (B1)	_	_	Sulfide Odor (C	21)					Water Table (C2)	
Sediment Deposits (B2)	X		hizospheres on		ots (C3)			X Crayfish Bu	irrows (C8)		
Drift Deposits (B3)		-	Reduced Iron				_		isible on Aeria		(C9)
Algal Mat or Crust (B4)			Reduction in	Tilled Soils	(C6)		-		Stressed Plants		
Iron Deposits (B5) Inundation Visible on A	rial Imagany (B7)	Other	Surface (C7)				-	Shallow Aq	Position (D2)		
Inundation visible on A	riai illiagery (B7)	_Other					-	X FAC-Neutra			
						1		Sphagnum !			
Water Depths (inches):				Remarks:	HYDROLO	GY PARAN	1ETER MET.				
Surface Water:											
Water Table: Saturated soil:	>20										
etation Parameter:	-20										
			1 12/0	T 6/]		N D			6.	TNID	T 0/]
Dominant Pinus I		Stratun Shrub	IND FAC	5			ninant Species		Stratum Herbaceous	IND FAC	5
Liquidambar	styraciflua	Shrub	FAC	3			is argutus		Herbaceous	FAC	3
Dichanthelium		Herbaceo		35 10	V						
Andropogon Andropogon		Herbaceo Herbaceo		10							
Juncus e	ffusus	Herbaceo	us OBL	10							
Rhexia vi	rginica	Herbaceo	us FACW	10							
% Dominant : NOTE: SPECIES INDICAT	pecies FAC or wetter:		NAI WETLAND	DI ANT LIST				evalence Index:	2.2		
Rapid Test for Hydrophyti		10 2016 NATIO	DNAL WETLAND	Remarks:	VEGETATI	ON PARAM	METER MET.	sing all species pres	sent.		
	e Test >50%: X	-									
	ndex is ≤ 3.0: X	_									
Problematic Hydrophyti	Vegetation:	-									
Parameter:											
ELYMINE HELE		Matrix	87		(M. 1-1)	Redox Feat				S. 113	S 3 5 7 5 2
Depth (inches) 0-5	2.5Y 4/1	st)	100	Col	or (Moist)	%	Туре	Loc		CLAY LO	
5-16	2.5Y 6/2		85	10	YR 6/8	10	С	M		CLAYLO	
					.5Y 6/1	5	D	M			
16-20	2.5Y 6/1		78	10	YR 5/6	20	С	M		CLAY LC	DAM
				2.	5YR 4/8	2	С	PL			
lydric Soil Indicators: Histosol (A1)	Coast B.	rairie Redox	(A16)		Redox Dark	Surface (E6)		T.	dicators for Pr	oblematic !	Avdric Soile
Histosol (A1) Histic Epipedon (A2)		fucky Miner		-	Depleted Dark		7)	111	aiors jor FF	somane I	Lyante Solls
Black Histic (A3)		leyed Matrix		· ·	Redox Depre		,		1cm Muck	(A9)	
Hydrogen Sulfide (A4)		edox (S5)	3 3	· ·	Marl (F10)	/			2cm Muck		
Stratified Layers (A5)		Matrix (S6)			Depleted Oct	nric (F11)			Reduced V	ertic (F18)	
Organic Bodies (A6)		rface (S7)		_	Iron-Mangan		F12)		Piedmont I		
5cm Mucky Mineral (A7		ie Below Sui		_	Umbric Surfa			-			amy Soils (F2
Muck Presence (A8)		rk Surface (S		_	Delta Ochric	4		-		Material (
1 cm Muck (A9) Depleted Below Dark Su		Mucky Mine Gleyed Matri		_	Reduced Ver Piedmont Flo		s (F19)	-	Other	ow Dark St	urface (TF12)
Thick Dark Surface (A12				· ·	Anomalous E			-	Oulei		
V		No.									
	arvad)			Remarks:	SOIL PARA	METER M	ET.				
Restrictive Layer (If Obs	(Trea)										
Restrictive Layer (If Obs Type: Depth (inches):											

Sampling Point Number: ___13__

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Compress	•	Project:	CHESTER	FIELD - HOPE	EWELL 230KV REBUILD)					
Section Procession Process P						FHOREWELL		_			
December Date	City		HESTERFIELD AND I			FHOPEWELL	Subregion (LI	_			
Som May the Name	Inves	rigator(s):						_			
Summary of Findings							Soil M	_			
Pydrylegies (Pydres on in Present Normal Consumentes Normal Consum	Summary of Findings	-			UPLAN	ND ABOVE ELA	C 'RVH-13'	_			•
Playing Patronest Sampled Area is within a Warlandi Protecting		Vegetation is	Present: X					NWI Classification	on:	N/A	
Wednet Pologogy in Present Problematic Parameters (see Remarks) Super's 0.1					Disturbed Parameters	s (see Remarks):					
	Wetland	d Hydrology is	Present:		Problematic Parameters	s (see Remarks):		Landfor	m:	FLAT	Γ
Surface Water (A1)		a is within a W	Vetland:	Atyp	oical Climate/Hydrology	(see Remarks):		Slope 9	/o:	0-1	
Surface Water (A1)	Hydrology Parameter:										
Right Water Table (A2)			Primary Indica	tors:				Surface Soil	Cracks (B6)		
Situation (A) Mont Fine Lines (B16) Soliment Deposits (D1) Soliment Deposits (D2) Double Deposits (D3) Double Deposits (D3) In Dirth Deposits (D3) In Dirth Deposits (D3) In Dirth Deposits (D3) In Depos					9)		_			ve Surface ((B8)
Water Marks (B1)						- 1	-				
Sediment Deposits (12) Ostitized Ritrosopheres on Living Roots (C3) Drift Deposits (12) Presence of Reduced from (C4) Algal Mat or Crust (E4) Recent from Reduction in Titled Souls (C6) Immunication Visible on Arterial Imagery (B7) Other Remarks My South South					CI)	1	-			C2)	
Definition (19)							-			22)	
Algal Mat or Crue (164)					-		-			al Imagery	(C9)
Inaudation Visible on Aerial Imagery (B7)			Recent Iron	Reduction in	Tilled Soils (C6)			Stunted or St	ressed Plants	(D1)	
Factoristal Test (DS) Sphagmum Noso (DB)	Iron Deposits (B5)		Thin Muck	Surface (C7)			_				
Remarks: HYDROLOGY PARAMETER NOT MET.	Inundation Visible on A	erial Imagery (B7)Other				_	Court Col Louis College			
Remarks: HYDROLOGY PARAMETER NOT MET.							_				
Surface Water Table Saturated soil: >20	Water Dantha (inches):				Damarka: HVDDC	OLOCV PARAN	TETED NOT M		ioss (D8)		
Non-Daminant Species	29 (2) 5				Remarks. HTDRC	LOGI PARAN	IEIER NOI W	iei.			
Dominant Species	5,000 A004000 T										
Dominant Species Stratum IND 9%											
Schedamora amudinaceus Andropogon virginicus Herbaccous FAC 5 Herbaccous FAC 10 Ruhus arguns Herbaccous FAC 3 Herbaccous FAC 4 Herbacc	Vegetation Parameter:										
Schedamora amudinaceus Andropogon virginicus Herbaccous FAC 5 Herbaccous FAC 10 Ruhus arguns Herbaccous FAC 3 Herbaccous FAC 4 Herbacc	Dominan	t Species	Streetur	IND	1 9/2	Non-Dor	ninant Spaciae		Stratum	IND	0/-
### Anthropogon virginicus Herbaceous FAC 10											
Regid Test for Hydrophytic Vegetation: Dominance Test >50%											
Regid Test for Hydrophytic Vegetation: Dominance Test >50%											
Regid Test for Hydrophytic Vegetation: Dominance Test >50%											
Regid Test for Hydrophytic Vegetation: Dominance Test >50%											-
Regid Test for Hydrophytic Vegetation: Dominance Test >50%											
Regid Test for Hydrophytic Vegetation: Dominance Test >50%											
Regid Test for Hydrophytic Vegetation: Dominance Test >50%											
Regid Test for Hydrophytic Vegetation: Dominance Test >50%											
Regid Test for Hydrophytic Vegetation: Dominance Test >50%											
Regid Test for Hydrophytic Vegetation: Dominance Test >50%											
Regid Test for Hydrophytic Vegetation: Dominance Test >50%											
Regid Test for Hydrophytic Vegetation: Dominance Test >50%											
Regid Test for Hydrophytic Vegetation: Dominance Test >50%			1					1			
Regid Test for Hydrophytic Vegetation: Dominance Test >50%	1 1 1 1 1 1 1 1 1										
Regid Test for Hydrophytic Vegetation: Dominance Test >50%											
Regid Test for Hydrophytic Vegetation: Dominance Test >50%	9/ Dominant	anagias EAC or	100%				Dro	valanca Inday:	3.0		
Remarks VEGETATION PARAMETER MET. Parameter Softs X				DNAL WETLAND	PLANT LIST			_		r.	
Dominance Test > 50% X Prevalence Index is ≤ 3.0 X Problematic Hydrophytic Vegetation:						ATION PARAM		and species prese			
Problematic Hydrophytic Vegetation:			X								
Natrix Redox Features Depth (inches) Color (Moist) % Color (Moist) % Type Loc Texture	Prevalence I	ndex is ≤ 3.0 :	X								
Matrix Redox Features	Problematic Hydrophyt	c Vegetation:									
Matrix Redox Features											
Depth (inches)	Soil Parameter:		Martin			Daday Foot				Now Assess	
O-3 10YR 4/2 100 10YR 5/8 10 C M CLAY LOAM 3-7 2.5Y 6/2 90 10YR 5/8 10 C M CLAY LOAM 7-20 2.5Y 7/4 100 CLAY LOAM Hydric Soil Indicators: Histosol (A1) Coast Prairie Redox (A16) Redox Dark Surface (F6) Indicators for Problematic Hydric Soils Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Black Histic (A3) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Icm Muck (A9) Hydrogen Sulfide (A4) Sandy Redox (S5) Marl (F10) 2cm Muck (A10) Stratified Layers (A5) Stripped Matrix (S6) Depleted Ochric (F11) Reduced Vertic (F18) Organic Bodies (A6) Dark Surface (S7) Iron-Manganese Masses (F12) Piedmont Floodplain Soils (F19) Scm Mucky Mineral (A7) Polyvalue Below Surface (S8) Umbric Surface (F13) Anomalous Bright Loamy Soils (F20) I cm Muck (A9) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Very Shallow Dark Surface (TF12) Depleted Below Dark Surface (A1 Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F20) Restrictive Layer (If Observed) Type: Remarks: SOIL PARAMETER MET.	Denth (inches)	Colo	r	0/0	Color (Moist)			Loc		Textu	re
3-7							-7/12				
Hydric Soil Indicators: Histosol (A1)					10YR 5/8	10	С	M			
Histosol (A1) Coast Prairie Redox (A16) Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F6) Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Redox Depressions (F8) Licm Muck (A9) Sandy Redox (S5) Marl (F10) Stratified Layers (A5) Stripped Matrix (S6) Depleted Ochric (F11) Depleted Ochric (F11) Reduced Vertic (F18) Fiedmont Floodplain Soils (F19) Anomalous Bright Loamy Soils (F20) Licm Muck (A9) Depleted Below Dark Surface (A1 Depleted Matrix (F2) Thick Dark Surface (A1 Depleted Matrix (F3) Remarks: SOIL PARAMETER MET.	7-20	2.	5Y 7/4	100						CLAY LC	DAM
Histosol (A1) Coast Prairie Redox (A16) Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F6) Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Redox Depressions (F8) Licm Muck (A9) Sandy Redox (S5) Marl (F10) Stratified Layers (A5) Stripped Matrix (S6) Depleted Ochric (F11) Depleted Ochric (F11) Reduced Vertic (F18) Piedmont Floodplain Soils (F19) Anomalous Bright Loamy Soils (F20) Muck Presence (A8) Thin Dark Surface (S9) Depleted Matrix (F2) Depleted Below Dark Surface (A1 Depleted Matrix (F3) Remarks: Remarks: SOIL PARAMETER MET. Indicators for Problematic Hydric Soils Icm Muck (A9) Lem Muck (A9) Depleted Dark Surface (F10) Reduced Vertic (F11) Reduced Vertic (F18) Piedmont Floodplain Soils (F20) Restrictive Layer (If Observed) Type: Remarks: SOIL PARAMETER MET.											
Histosol (A1) Coast Prairie Redox (A16) Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F6) Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Redox Depressions (F8) Licm Muck (A9) Sandy Redox (S5) Marl (F10) Stratified Layers (A5) Stripped Matrix (S6) Depleted Ochric (F11) Depleted Ochric (F11) Reduced Vertic (F18) Piedmont Floodplain Soils (F19) Anomalous Bright Loamy Soils (F20) Muck Presence (A8) Thin Dark Surface (S9) Depleted Matrix (F2) Depleted Below Dark Surface (A1 Depleted Matrix (F3) Remarks: Remarks: SOIL PARAMETER MET. Indicators for Problematic Hydric Soils Icm Muck (A9) Lem Muck (A9) Depleted Dark Surface (F10) Reduced Vertic (F11) Reduced Vertic (F18) Piedmont Floodplain Soils (F20) Restrictive Layer (If Observed) Type: Remarks: SOIL PARAMETER MET.											
Histic Epipedon (A2) Black Histic (A3) Sandy Gleyed Matrix (S4) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) Mucky Mineral (A7) Polyvalue Below Surface (S8) Mucky Mineral (F1) Depleted Ochric (F11) Stratified Layers (A5) Stripped Matrix (S6) Organic Bodies (A6) Dark Surface (S7) Iron-Manganese Masses (F12) Piedmont Floodplain Soils (F19) Anomalous Bright Loamy Soils (F20) Muck Presence (A8) Thin Dark Surface (S9) Depleted Ochric (F17) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Depleted Below Dark Surface (A1 Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) Anomalous Bright Loamy Soils (F20) Restrictive Layer (If Observed) Type:											
Black Histic (A3) Sandy Gleyed Matrix (S4) Redox Depressions (F8) 1cm Muck (A9) Hydrogen Sulfide (A4) Sandy Redox (S5) Marl (F10) 2cm Muck (A10) Stratified Layers (A5) Stripped Matrix (S6) Depleted Ochric (F11) Reduced Vertic (F18) Organic Bodies (A6) Dark Surface (S7) Iron-Manganese Masses (F12) Piedmont Floodplain Soils (F19) Som Mucky Mineral (A7) Polyvalue Below Surface (S8) Umbric Surface (F13) Anomalous Bright Loamy Soils (F20) Muck Presence (A8) Thin Dark Surface (S9) Delta Ochric (F17) Red Parent Material (TF2) 1 cm Muck (A9) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Very Shallow Dark Surface (TF12) Depleted Below Dark Surface (A1 Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) Thick Dark Surface (A12) X Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) Restrictive Layer (If Observed) Type: Remarks: SOIL PARAMETER MET.							_	Ind	icators for Pro	oblematic F	lydric Soils
Hydrogen Sulfide (A4) Stratified Layers (A5) Straiped Matrix (S6) Organic Bodies (A6) Dark Surface (S7) Jorn-Manganese Masses (F12) Depleted Ochric (F11) From Mucky Mineral (A7) Muck Presence (A8) Depleta Ochric (F13) Muck Presence (A8) Thin Dark Surface (S9) Delta Ochric (F17) Red Parent Material (TF2) Depleted Below Dark Surface (A1 Depleted Below Dark Surface (A1 Depleted Matrix (F2) Thick Dark Surface (A12) Restrictive Layer (If Observed) Type: Marl (F10) Depleted Ochric (F11) Reduced Ochric (F13) Anomalous Bright Loamy Soils (F20) Piedmont Floodplain Soils (F19) Anomalous Bright Loamy Soils (F20) Remarks: SOIL PARAMETER MET.							7)			(10)	
Stratified Layers (A5) Organic Bodies (A6) Dark Surface (S7) Iron-Manganese Masses (F12) Piedmont Floodplain Soils (F19) Anomalous Bright Loamy Soils (F20) Pelta Ochric (F17) Red Parent Material (TF2) Red Parent Material (TF2) Peldmont Floodplain Soils (F19) Anomalous Bright Loamy Soils (F20) Red Parent Material (TF2) Pelta Ochric (F17) Red Parent Material (TF2) Pelta Ochric (F18) Pelta Ochric (F17) Red Parent Material (TF2) Pelta Ochric (F18) Personace (A8) Depleted Below Dark Surface (A1 Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) Anomalous Bright Loamy Soils (F20) Restrictive Layer (If Observed) Type: Remarks: SOIL PARAMETER MET.	The second secon			(84)				_			
Organic Bodies (A6) Dark Surface (S7) Iron-Manganese Masses (F12) Piedmont Floodplain Soils (F19) Scm Mucky Mineral (A7) Polyvalue Below Surface (S8) Umbric Surface (F13) Anomalous Bright Loamy Soils (F20) Red Parent Material (TF2) Piedmont Floodplain Soils (F19) Anomalous Bright Loamy Soils (F20) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Depleted Below Dark Surface (A1 Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) Piedmont Floodplain Soils (F19) Other Restrictive Layer (If Observed) Type: Remarks: SOIL PARAMETER MET.								-			
Sem Mucky Mineral (A7)							F12)	_			Soils (F19)
Muck Presence (A8) Thin Dark Surface (S9) Delta Ochric (F17) Red Parent Material (TF2) 1 cm Muck (A9) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Very Shallow Dark Surface (TF12) Depleted Below Dark Surface (A1 Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) Other Thick Dark Surface (A12) Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) Restrictive Layer (If Observed) Type: SOIL PARAMETER MET.				face (S8)		1.50	,	_	_		
1 cm Muck (A9)								-			
Depleted Below Dark Surface (Al Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) Other Thick Dark Surface (A12) X Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) Restrictive Layer (If Observed) Type: SOIL PARAMETER MET.					-			_			
Thick Dark Surface (A12) X Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) Restrictive Layer (If Observed) Type: SOIL PARAMETER MET.			A (5)				s (F19)				
Type:						0.75			_		
Type:											
	8 05.	served)			Remarks: SOIL PA	ARAMETER M	ET.				
	Type: Depth (inches):										

Sampling Point Number: __14__

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

(Stantos	Project:		FIELD - HOPE				- C:/T			27/4		
	Applicant: ty/County: CHESTER		OMINION END			EWELL	•	Township/Range: LRR or MLRA):		N/A LRR I	p	
	State:		VIRC	GINIA				Start:		.344021° -77		
Inve	stigator(s):	E	B. CONNERS,	A. MCINTYR	₹E					.290017° -77		
	Date:		12/19	0/2017	-		- Soil	Map Unit Name:	DUNB	AR FINE SA	NDY LC	DAM
Summary of Findings:					UPLAND A	BOVE FI	AG 'BCB-8'.					
	tic Vegetation is Presen				Normal Circu			NWI Classifica		N/A		
	Hydric Soils are Presen				Parameters (see			Local Re		CONVI		
	nd Hydrology is Presen ea is within a Wetland				Parameters (see /Hydrology (see			Landfe Slop		SLOP 0-2	E	
Hydrology Parameter:	ca is within a victimic		тиур	rear Crimates	Trydrology (see	remans).		оюр	0 70.			
	Pi	rimary Indicat	ors:						Secondary Indic	cators:		
Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4 Iron Deposits (B5) Inundation Visible on	2)	Aquatic Fau Marl Deposi Hydrogen S Oxidized Rh Presence of Recent Iron		C1) n Living Roo n (C4)				Sparsely V Drainage P Moss Trim Dry-Season Crayfish B Saturation Stunted or Geomorph Shallow Ac	il Cracks (B6) egetated Concar atterns (B10). Lines (B16) n Water Table (t urrows (C8) Visible on Aeria Stressed Plants ic Position (D2) quitard (D3) ral Test (D5) Moss (D8)	C2) al Imagery ((D1)		
Water Depths (inches):				Remarks:	HYDROLOG	Y PARA	METER NOT	MET.				
Surface Wate Water Table												
Saturated soi												
Vegetation Parameter:												
Domina	nt Species	Stratum	IND	%		Non-Do	minant Species	3	Stratum	IND	%	1
	aquilimm	Herbaceou		25			us argutus	li	Herbaceous	FAC	5	
	arundinaceus otundifolia	Herbaceou Vine	FAC FAC	20 10	,		issus quinquefoi era japonica	na	Vine Vine	FACU FACU	3	
% Dominan	t species FAC or wetter	67%					P	revalence Index:	3.5			
	ATOR STATUS ACCORDING	TO 2016 NATIO	NAL WETLAND					using all species pro	esent.			
Rapid Test for Hydrophy	rtic Vegetation: nce Test >50%: X	_		Remarks:	VEGETATIO	N PARA	METER MET	•				
1995 179	Index is ≤ 3.0 :	-										
Problematic Hydrophy		_										
0.11 P												
Soil Parameter:	M	Matrix				Redox Fea	fures		No. of Contract of	THE RES	o System	
Depth (inches)	Color (Mo		%	Colo	r (Moist)	%	Туре	Loc		Textur	re	Contract States
0-4	10YR 3/2		100							LOAN		
4-20	2.5Y 6/4		95	2.5	5Y 6/6	5	С	M		LOAN	1	
Hydric Soil Indicators:			110		D 1 D 10	C (EC)		1 ,	F . C D			.,
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) 5cm Mucky Mineral (A) Muck Presence (A8) 1 cm Muck (A9) Depleted Below Dark S Thick Dark Surface (A	Sandy	rairie Redox (. Mucky Minera Gleyed Matrix Redox (S5) d Matrix (S6) urface (S7) ue Below Surfark Surface (S' Mucky Minera Gleyed Matrix d Matrix (F3)	face (S8) 9) al (F1)		Redox Dark St Depleted Dark Redox Depress Marl (F10) Depleted Ochr Iron-Manganes Umbric Surfac Delta Ochric (I Reduced Verti Piedmont Floo Anomalous Br	Surface (I sions (F8) ic (F11) se Masses e (F13) F17) c (F18) dplain Soi	(F12) Is (F19)		lcm Muck 2cm Muck Reduced V Piedmont I Anomalous Red Parent Very Shall	(A9) (A10) Tertic (F18) Floodplain S Bright Loa Material (7	Soils (F1 amy Soils TF2)	9) s (F20)
Restrictive Layer (If O				Remarks:	SOIL PARAM	METER N	ОТ МЕТ.					
Type Depth (inches)												

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Project: CHESTERFIELD - HOPEWELL 230KV REBUILD Stantec Section/Township/Range Applicant DOMINION ENERGY VIRGINIA City/County: CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL Subregion (LRR or MLRA): LRR P Start 37.344021° -77.392836° State VIRGINIA B. CONNERS, A. MCINTYRE Terminus: 37.290017° -77.283916° Investigator(s): Date: 12/19/2017 Soil Map Unit Name: DUNBAR FINE SANDY LOAM Summary of Findings: WETLAND BELOW FLAG 'BCB-14'. Hydrophytic Vegetation is Present: NWI Classification: Normal Circumstances: X N/A Disturbed Parameters (see Remarks): Local Relief: CONCAVE Hydric Soils are Present Wetland Hydrology is Present Landform: TOE OF SLOPE Problematic Parameters (see Remarks): Sampled Area is within a Wetland: Atypical Climate/Hydrology (see Remarks): Slope % 0-2 Hydrology Parameter: Primary Indicators: Secondary Indicators: Surface Soil Cracks (B6) Surface Water (A1) Sparsely Vegetated Concave Surface (B8) Water Stained Leaves (B9) High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10) Saturation (A3) Marl Deposits (B15) Moss Trim Lines (B16) Water Marks (B1) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Sediment Deposits (B2) X Oxidized Rhizospheres on Living Roots (C3) Crayfish Burrows (C8) Drift Deposits (B3) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) Iron Deposits (B5) Thin Muck Surface (C7) X Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) Shallow Aquitard (D3) Other X FAC-Neutral Test (D5) Sphagnum Moss (D8) HYDROLOGY PARAMETER MET. Water Depths (inches): Remarks: Surface Water: Water Table: >20 Saturated soil: Vegetation Parameter: IND Non-Dominant Species IND **Dominant Species** Stratum Stratum Dichanthelium dichotom Herbaceo Juncus effusus Carex lurida Herbaceous OBL 15 Herbaceous FAC 25 Herbaceous Panicum virgatum OBL 10 Solidago altissima Lycopodium digitatum FACU UPL Herbaceous Herbaceous Pinus taeda Herbaceous FAC Andropogon glomeratus Herbaceous FACW 5 % Dominant species FAC or wetter: 100% Prevalence Index: NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST Calculated using all species present Rapid Test for Hydrophytic Vegetation VEGETATION PARAMETER MET. Remarks: Dominance Test >50%: Prevalence Index is ≤ 3.0 : Problematic Hydrophytic Vegetation: Soil Parameter: Matrix Redox Features Color (Moist) Color (Moist) Depth (inches) % Type Loc Texture 0-8 10YR 4/2 85 10YR 5/8 15 M CLAY LOAM 8-20 10YR 5/1 90 10YR 5/8 10 M CLAY LOAM Hydric Soil Indicators Histosol (A1) Coast Prairie Redox (A16) Redox Dark Surface (F6) Indicators for Problematic Hydric Soils Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Black Histic (A3) Sandy Gleyed Matrix (S4) Redox Depressions (F8) 1cm Muck (A9) Hydrogen Sulfide (A4) Sandy Redox (S5) Marl (F10) 2cm Muck (A10) Stratified Layers (A5) Stripped Matrix (S6) Depleted Ochric (F11) Reduced Vertic (F18) Organic Bodies (A6) Dark Surface (S7) Iron-Manganese Masses (F12) Piedmont Floodplain Soils (F19) Polyvalue Below Surface (S8) Anomalous Bright Loamy Soils (F20) 5cm Mucky Mineral (A7) Umbric Surface (F13) Thin Dark Surface (S9) Delta Ochric (F17) Red Parent Material (TF2) Muck Presence (A8) Loamy Mucky Mineral (F1) Very Shallow Dark Surface (TF12) 1 cm Muck (A9) Reduced Vertic (F18) Depleted Below Dark Surface (A Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) Other Thick Dark Surface (A12) X Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) Restrictive Layer (If Observed) Remarks: SOIL PARAMETER MET. Type: Depth (inches):

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region Sampling Point Number: 16 CHESTERFIELD - HOPEWELL 230KV REBUILD Project: Stantec Section/Township/Range: Applicant: DOMINION ENERGY VIRGINIA City/County: CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL Subregion (LRR or MLRA): LRR P State VIRGINIA Start 37.344021° -77.392836° Terminus Investigator(s): B. CONNERS, A. MCINTYRE 37.290017° -77.283916° Soil Map Unit Name: DUNBAR FINE SANDY LOAM Date Summary of Findings: UPLAND ABOVE FLAG 'BCD-2-2'. Hydrophytic Vegetation is Present: Normal Circumstances: X NWI Classification N/A Hydric Soils are Present: Disturbed Parameters (see Remarks): Local Relief NONE Landform: Wetland Hydrology is Present: Problematic Parameters (see Remarks): FLAT Sampled Area is within a Wetland: Atypical Climate/Hydrology (see Remarks): Slope % 0-1 Hydrology Parameter: Primary Indicators: Secondary Indicators: Surface Soil Cracks (B6) Surface Water (A1) Water Stained Leaves (B9) Sparsely Vegetated Concave Surface (B8) High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10) Saturation (A3) Marl Deposits (B15) Moss Trim Lines (B16) Hydrogen Sulfide Odor (C1) Water Marks (B1) Dry-Season Water Table (C2) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Crayfish Burrows (C8) Drift Deposits (B3) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) Iron Deposits (B5) Thin Muck Surface (C7) X Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) Shallow Aquitard (D3) FAC-Neutral Test (D5) Sphagnum Moss (D8) Water Depths (inches): HYDROLOGY PARAMETER NOT MET. Surface Water: Water Table: Saturated soil: Vegetation Parameter: **Dominant Species** Stratum IND % Non-Dominant Species Stratum IND Ilex opaca Shrub FAC Schedonorus arundinaceus Herbaceous FAC Pteridium aquilinum Andropogon glomeratus FACW Herbaceous 50% % Dominant species FAC or wetter: Prevalence Index: NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST Rapid Test for Hydrophytic Vegetation: Remarks: VEGETATION PARAMETER NOT MET. Dominance Test >50% Prevalence Index is ≤ 3.0 : Problematic Hydrophytic Vegetation: Soil Parameter: Matrix Redox Features Color (Moist) Color (Moist) Depth (inches) % % Type Loc Texture 0-3 10YR 3/1 100 LOAM 10YR 5/6 15 M 3-20 2.5Y 5/4 85 LOAM Hydric Soil Indicators: Redox Dark Surface (F6) Histosol (A1) Coast Prairie Redox (A16) Indicators for Problematic Hydric Soils Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Black Histic (A3) Sandy Gleyed Matrix (S4) Redox Depressions (F8) 1cm Muck (A9) Hydrogen Sulfide (A4) Sandy Redox (S5) Marl (F10) 2cm Muck (A10) Stratified Layers (A5) Stripped Matrix (S6) Depleted Ochric (F11) Reduced Vertic (F18) Organic Bodies (A6) Dark Surface (S7) Iron-Manganese Masses (F12) Piedmont Floodplain Soils (F19) 5cm Mucky Mineral (A7) Polyvalue Below Surface (S8) Umbric Surface (F13) Anomalous Bright Loamy Soils (F20) Muck Presence (A8) Thin Dark Surface (S9) Delta Ochric (F17) Red Parent Material (TF2) 1 cm Muck (A9) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Very Shallow Dark Surface (TF12) Depleted Below Dark Surface (A) Piedmont Floodplain Soils (F19) Loamy Gleyed Matrix (F2) Other Thick Dark Surface (A12) Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) Restrictive Layer (If Observed) SOIL PARAMETER NOT MET.

Type: Depth (inches):

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Project: CHESTERFIELD - HOPEWELL 230KV REBUILD Stantec Section/Township/Range Applicant: DOMINION ENERGY VIRGINIA City/County: CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL Subregion (LRR or MLRA): LRR P State Start 37.344021° -77.392836° B. CONNERS, A. MCINTYRE Terminus: 37.290017° -77.283916° Investigator(s): Date: 12/19/2017 Soil Map Unit Name: DUNBAR FINE SANDY LOAM Summary of Findings: WETLAND BELOW FLAG 'BCD-4'. Hydrophytic Vegetation is Present: NWI Classification X Normal Circumstances: X N/A Disturbed Parameters (see Remarks): Hydric Soils are Present Local Relief NONE Wetland Hydrology is Present Landform X Problematic Parameters (see Remarks): FLAT Sampled Area is within a Wetland: X Atypical Climate/Hydrology (see Remarks): Slope % 0-1 Hydrology Parameter: Primary Indicators: Secondary Indicators: Surface Soil Cracks (B6) Surface Water (A1) Sparsely Vegetated Concave Surface (B8) Water Stained Leaves (B9) High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10) Saturation (A3) Marl Deposits (B15) Moss Trim Lines (B16) Hydrogen Sulfide Odor (C1) Water Marks (B1) Dry-Season Water Table (C2) Sediment Deposits (B2) X Oxidized Rhizospheres on Living Roots (C3) Crayfish Burrows (C8) Drift Deposits (B3) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) Iron Deposits (B5) Thin Muck Surface (C7) X Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) Other Shallow Aquitard (D3) X FAC-Neutral Test (D5) Sphagnum Moss (D8) HYDROLOGY PARAMETER MET. Water Depths (inches): Remarks: Surface Water Water Table Saturated soil: >20 Vegetation Parameter: IND IND **Dominant Species** Stratum Non-Dominant Species Stratum Herbaceous FAC 45 Carex lurida Herbaceous OBL 20 FACW Andropogon glomeratus Herbaceous 25 Panicum virgatum Herbaceous 10 FAC Solidago altissima Herbaceous FACU 10 % Dominant species FAC or wetter: 100% Prevalence Index: NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST ted using all species presen VEGETATION PARAMETER MET. Rapid Test for Hydrophytic Vegetation Remarks: Dominance Test >50%: Prevalence Index is ≤ 3.0 : Problematic Hydrophytic Vegetation: Soil Parameter: Matrix Redox Features Color (Moist) Color (Moist) Depth (inches) % % Type Loc Texture 0-1 10YR 4/1 100 CLAY LOAM 7.5YR 5/8 1-20 10YR 6/1 75 25 C M CLAY LOAM Hydric Soil Indicators: Histosol (A1) Coast Prairie Redox (A16) Redox Dark Surface (F6) Indicators for Problematic Hydric Soils Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Black Histic (A3) Sandy Gleyed Matrix (S4) Redox Depressions (F8) 1cm Muck (A9) Hydrogen Sulfide (A4) Sandy Redox (S5) 2cm Muck (A10) Marl (F10) Stratified Layers (A5) Stripped Matrix (S6) Depleted Ochric (F11) Reduced Vertic (F18) Organic Bodies (A6) Dark Surface (S7) Iron-Manganese Masses (F12) Piedmont Floodplain Soils (F19) 5cm Mucky Mineral (A7) Polyvalue Below Surface (S8) Umbric Surface (F13) Anomalous Bright Loamy Soils (F20) Muck Presence (A8) Thin Dark Surface (S9) Delta Ochric (F17) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) 1 cm Muck (A9) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Depleted Below Dark Surface (A Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) Other Thick Dark Surface (A12) X Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) Restrictive Layer (If Observed) Remarks: SOIL PARAMETER MET. Type: Depth (inches):

Sampling Point Number: ___18

Cit	Applicant: E y/County: CHESTERFIELD AND State:	OMINION ENE	INIA A. MCINTYRE	PEWELL	Subregion (Township/Range: [LRR or MLRA): Start: Terminus: Map Unit Name:	37.2900	N/A LRR P)21° -77.392836° J17° -77.283916° ACEVILLE SANDY LOAN
Summary of Findings:			UPLAND A	BOVE FL	AG 'BCF-4'.			
6 6 6	c Vegetation is Present: X		Normal Circ			NWI Classificatio		N/A
	Iydric Soils are Present: d Hydrology is Present:		Disturbed Parameters (see Problematic Parameters (see			Local Relie Landforr		NONE SLOPE
Sampled Are	ea is within a Wetland:	1	ical Climate/Hydrology (see			Slope %		0-2
Hydrology Parameter:	Primary Indica	of ones.				Sac	condary Indicator	
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4 Iron Deposits (B5) Inundation Visible on A	Aquatic Fa Marl Depo Hydrogen Oxidized R Presence o Recent Iror Thin Muck Aerial Imagery (B7) Other	sits (B15) Sulfide Odor (C thizospheres or f Reduced Iron	C1) a Living Roots (C3) (C4) Tilled Soils (C6)	GY PARAN	METER NOT	Drainage Patt Moss Trim L. Dry-Season V Crayfish Burr Saturation Vi Stunted or Str Geomorphic I Shallow Aqui FAC-Neutral Sphagnum M	etated Concave Siterns (B10) ines (B16) Vater Table (C2) rows (C8) sible on Aerial Im- ressed Plants (D1) Position (D2) itard (D3) Test (D5)	agery (C9)
Water Table			1 2					
Saturated soil Vegetation Parameter:	>20							
Dominar	t Species Stratum	n IND	%	N D-	ninant Specie		Stratum 1	ND %
NOTE: SPECIES INDICA Rapid Test for Hydrophyt Dominan Prevalence Problematic Hydrophyt	species FAC or wetter: species FAC or wetter: for status according to 2016 Nation in the control of the contr	FAC		Allin Andropo Solamu Achille		Prevalence Index:	Herbaceous Herbaceous Herbaceous Herbaceous 3.5	ACU 5 ACU 5 ACU 5 ACU 5 ACU 5
Soil Parameter:	Matrix			Redox Feat	tures	- 8		
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Туре	Loc		Texture
0-20	2.5Y 5/4	100						LOAM
Hydric Soil Indicators:								
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) 5cm Mucky Mineral (A Muck Presence (A8) 1 cm Muck (A9) Depleted Below Dark S Thick Dark Surface (A1	Thin Dark Surface (S Loamy Mucky Mine urface (A) Loamy Gleyed Matri	al (S1) x (S4) rface (S8) S9) ral (F1) x (F2)	Redox Dark S Depleted Darl Redox Depres Marl (F10) Depleted Och Iron-Mangane Umbric Surfa Delta Ochric I Reduced Vert Piedmont Flot Anomalous B	c Surface (F8) ric (F11) see Masses (ce (F13) (F17) ic (F18) odplain Soil	F12) s (F19)	Indi	1cm Muck (A9 2cm Muck (A10 Reduced Vertic Piedmont Flood Anomalous Brig Red Parent Mat	0) (F18) Iplain Soils (F19) Ight Loamy Soils (F20)
Restrictive Layer (If Ob			Remarks: SOIL PARA					

Type: _ Depth (inches):

Sampling Point Number: 19

	Project:	CHESTER	RFIELD - HOPE	EWELL 230KV REBUILD						
	Applicant:			ERGY VIRGINIA			wnship/Range: _		N/A	
Ci		FIELD AND		RGE COUNTIES; CITY OF	FHOPEWELL	Subregion (Ll	RR or MLRA): _		LRR P	
Inve	State:stigator(s):			GINIA A. MCINTYRE			Terminus:		.344021° -77.	
	Date:			0/2017		Soil M	ap Unit Name:			NDY LOAM
Summany of Findings				WETLA	ND DELOW E	AC IDCE 4				
Summary of Findings: Hydrophyt	ic Vegetation is Present	X			ND BELOW FI Circumstances:		NWI Classification	on:	N/A	
	Hydric Soils are Present			Disturbed Parameters			Local Reli		CONCA	VE
	nd Hydrology is Present			Problematic Parameters		_	Landfor		FLAT	
Sampled Ar Hydrology Parameter:	ea is within a Wetland	. X	Atyp	oical Climate/Hydrology	(see Remarks):		Slope	%:	0-1	
nydrology Farameter.	Pri	mary Indica	itors:				Se	condary Indic	ators:	
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)		Aquatic Fa Marl Depo					Drainage Pa Moss Trim I	getated Concav terns (B10)		B8)
Sediment Deposits (B2) <u>X</u>			n Living Roots (C3)		-	Crayfish Bu		(2)	
Drift Deposits (B3)	· _		Reduced Iron					isible on Aeria	al Imagery (C9)
Algal Mat or Crust (B4		_		Tilled Soils (C6)		_		ressed Plants (
Iron Deposits (B5) Inundation Visible on A	Aerial Imageny (B7)	_Thin Muck Other	Surface (C7)			-	X Geomorphic Shallow Aqu			
inundation visible on /	Aeriai Imagery (B7)	_Other				-	FAC-Neutra			
							Sphagnum M			
Water Depths (inches):				Remarks: HYDRO	LOGY PARAM	IETER MET.				
Surface Water Water Table Saturated soil	:									
Vegetation Parameter:										
Dominar	nt Species	Stratun	n IND	%	Non-Don	ninant Species		Stratum	IND	%
Liquidamba	r styraciflua	Shrub	FAC	30		is argutus		Herbaceous	FAC	5
Juncus Solidago	n dichotomum effusus altissima iona-nox japonica	Herbaceo Herbaceo Herbaceo Vine Vine	us OBL	40 20 20 5 5						
% Dominant	species FAC or wetter:	67%				Pre	valence Index:	2.9		
	TOR STATUS ACCORDING	TO 2016 NATIO	ONAL WETLAND	NO AREA OF THE PROPERTY.			sing all species prese	nt.		
Rapid Test for Hydrophy	tic Vegetation: ce Test >50%: X			Remarks: VEGETA	ATION PARAN	IETER MET.				
Prevalence Problematic Hydrophy	Index is ≤ 3.0 : X	•								
Soil Parameter:	N	Aatrix		T	Redox Feat	ures		Ten Cale	4.3	
Depth (inches)	Color (Mois		%	Color (Moist)	%	Type	Loc		Texture	
0-7	10YR 4/1		90	10YR 4/6	10	С	M		CLAY LO	
7-18 18-20	10YR 6/1 10YR 6/1		75 65	7.5YR 5/8 7.5YR 5/8	25 35	C	M M		CLAY LO	
	101110/1								22 20.	
Hydric Soil Indicators: Histosol (A1)	Coast B-	airie Redox	(A16)	Padar Da	ark Surface (F6)		T	icators for Pro	hlamatic II	vdnia Saila
Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) 5cm Mucky Mineral (A Muck Presence (A8) 1 cm Muck (A9) Depleted Below Dark S Thick Dark Surface (A1	Sandy M Sandy G Sandy R Stripped Dark Sun 7) Polyvatlu Thin Dar Loamy M urface (A Loamy C	lucky Minera leyed Matrix edox (S5) Matrix (S6) fface (S7) e Below Sur rk Surface (S Mucky Minera Gleyed Matri	face (S8) (S9) (ral (F1) (x (F2)	Depleted Redox De Marl (F10 Depleted Iron-Man Umbire S Delta Och Reduced Piedmont	Dark Surface (Fepressions (F8) D) Ochric (F11) ganese Masses (Jurface (F13)	F12)		lcm Muck 2cm Muck Reduced V Piedmont F Anomalous Red Parent	(A9) (A10) ertic (F18) floodplain So Bright Loan Material (T	oils (F19) my Soils (F20)
Inick Dark Surface (Al				Anomator	Drigin Loanly	2013 (1 20)				
Restrictive Layer (If Ob Type:				Remarks: SOIL PA	RAMETER M	ET.		400		
Depth (inches):										

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

CHESTERFIELD - HOPEWELL 230KV REBUILD Project: (Stantec Section/Township/Range Applicant: DOMINION ENERGY VIRGINIA Subregion (LRR or MLRA): City/County: CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL LRR P State VIRGINIA Start 37.344021° -77.392836° Investigator(s): B. CONNERS, A. MCINTYRE Terminus: 37.290017° -77.283916° Date Soil Map Unit Name: DUNBAR FINE SANDY LOAM Summary of Findings: UPLAND NEAR FLAG 'BCH-4'. Hydrophytic Vegetation is Present: Normal Circumstances: X NWI Classification: N/A Disturbed Parameters (see Remarks): Local Relief: Hydric Soils are Present: NONE Wetland Hydrology is Present Landform: Problematic Parameters (see Remarks): FLAT Sampled Area is within a Wetland: Atypical Climate/Hydrology (see Remarks): Slope %: 0 **Hydrology Parameter:** Primary Indicators: Secondary Indicators: Surface Soil Cracks (B6) Surface Water (A1) Water Stained Leaves (B9) Sparsely Vegetated Concave Surface (B8) High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10) Marl Deposits (B15) Moss Trim Lines (B16) Saturation (A3) Water Marks (B1) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (C3) Sediment Deposits (B2) Crayfish Burrows (C8) Drift Deposits (B3) Saturation Visible on Aerial Imagery (C9) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) Iron Deposits (B5) Thin Muck Surface (C7) X Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) Other Shallow Aquitard (D3) FAC-Neutral Test (D5) Sphagnum Moss (D8) Water Depths (inches): HYDROLOGY PARAMETER NOT MET. Surface Water: Water Table: Saturated soil: >20 Vegetation Parameter: Stratum IND Non-Dominant Species Stratum IND **Dominant Species** Herbaceous FACU 35 Dichanthelium dichotom Herbaceous FAC 20 Solidago altissima Herbaceous FACU Solanum carolinense Herbaceous FACU 15 FAC FAC Setaria pumila Herbaceous 10 Andropogon virginicus Herbaceous 5 Schedonorus arundinaceus Herbaceous % Dominant species FAC or wetter: 0 Prevalence Index: NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST Rapid Test for Hydrophytic Vegetation: Remarks: VEGETATION PARAMETER NOT MET. Dominance Test >50% Prevalence Index is ≤ 3.0 : Problematic Hydrophytic Vegetation: Soil Parameter: Matrix Redox Features Depth (inches) Color (Moist) Color (Moist) % Type Loc Texture 0-8 10YR 3/2 100 LOAM 8-20 10YR 3/1 100 LOAM Hydric Soil Indicators: Histosol (A1) Coast Prairie Redox (A16) Redox Dark Surface (F6) Indicators for Problematic Hydric Soils Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Black Histic (A3) Sandy Gleyed Matrix (S4) Redox Depressions (F8) 1cm Muck (A9) Hydrogen Sulfide (A4) Sandy Redox (S5) Marl (F10) 2cm Muck (A10) Stratified Layers (A5) Stripped Matrix (S6) Depleted Ochric (F11) Reduced Vertic (F18) Organic Bodies (A6) Dark Surface (S7) Iron-Manganese Masses (F12) Piedmont Floodplain Soils (F19) 5cm Mucky Mineral (A7) Polyvalue Below Surface (S8) Umbric Surface (F13) Anomalous Bright Loamy Soils (F20) Red Parent Material (TF2) Muck Presence (A8) Thin Dark Surface (S9) Delta Ochric (F17) Loamy Mucky Mineral (F1) Very Shallow Dark Surface (TF12) 1 cm Muck (A9) Reduced Vertic (F18) Depleted Below Dark Surface (A Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) Other Thick Dark Surface (A12) Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) Restrictive Layer (If Observed) Remarks: SOIL PARAMETER NOT MET. Type:

Depth (inches):

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region Sampling Point Number: 21 CHESTERFIELD - HOPEWELL 230KV REBUILD Project: Stantec Section/Township/Range Applicant DOMINION ENERGY VIRGINIA City/County: CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL Subregion (LRR or MLRA): LRR P State Start 37.344021° -77.392836° VIRGINIA Investigator(s): B. CONNERS, A. MCINTYRE Terminus: 37.290017° -77.283916° Date: 12/21/2017 Soil Map Unit Name: TETOTUM LOAM, CLAYEY SUBSTRATUM Summary of Findings: UPLAND ABOVE FLAG 'BCJ-16'. Hydrophytic Vegetation is Present: Normal Circumstances: X NWI Classification: X N/A Hydric Soils are Present: Disturbed Parameters (see Remarks): Local Relief: NONE Wetland Hydrology is Present: Problematic Parameters (see Remarks): Landform: FLAT Sampled Area is within a Wetland: Atypical Climate/Hydrology (see Remarks): Slope %: 0 **Hydrology Parameter:** Primary Indicators: Secondary Indicators: Surface Soil Cracks (B6) Surface Water (A1) Water Stained Leaves (B9) Sparsely Vegetated Concave Surface (B8) High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10) Moss Trim Lines (B16) Saturation (A3) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Water Marks (B1) Dry-Season Water Table (C2) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Crayfish Burrows (C8) Drift Deposits (B3) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) Iron Deposits (B5) Thin Muck Surface (C7) X Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) Shallow Aquitard (D3) Other FAC-Neutral Test (D5) Sphagnum Moss (D8) HYDROLOGY PARAMETER NOT MET. Water Depths (inches): Remarks: Surface Water: Water Table: Saturated soil: >20 Vegetation Parameter: Non-Dominant Species **Dominant Species** Stratum Stratum Liquidambar styraciflua Dichanthelium dichotomum Shrub FAC 10 Rubus argutus Solanum carolinense Herbaceous FAC 15 FAC 35 Herbaceous Herbaceous FACU Eupatorium capillifolium Schedonorus arundinaceus Herbaceous FACU 25 20 Herbaceous FAC % Dominant species FAC or wetter: Prevalence Index: 75% NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST ulated using all species pres VEGETATION PARAMETER MET. Rapid Test for Hydrophytic Vegetation Remarks: Dominance Test >50%: Prevalence Index is ≤ 3.0 : Problematic Hydrophytic Vegetation: Soil Parameter: Matrix Redox Features Color (Moist) Color (Moist) Depth (inches) % Type Loc Texture 95 0-10 2.5Y 5/4 7.5YR 5/8 M FINE SANDY LOAM 10-20 2.5Y 6/4 90 7.5YR 5/8 10 M FINE SANDY LOAM Hydric Soil Indicators: Histosol (A1) Coast Prairie Redox (A16) Redox Dark Surface (F6) Indicators for Problematic Hydric Soils Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Black Histic (A3) Sandy Gleyed Matrix (S4) Redox Depressions (F8) 1cm Muck (A9) Hydrogen Sulfide (A4) Sandy Redox (S5) Marl (F10) 2cm Muck (A10) Stratified Layers (A5) Stripped Matrix (S6) Depleted Ochric (F11) Reduced Vertic (F18) Organic Bodies (A6) Dark Surface (S7) Iron-Manganese Masses (F12) Piedmont Floodplain Soils (F19) 5cm Mucky Mineral (A7) Polyvalue Below Surface (S8) Umbric Surface (F13) Anomalous Bright Loamy Soils (F20) Thin Dark Surface (S9) Delta Ochric (F17) Muck Presence (A8) Red Parent Material (TF2) 1 cm Muck (A9) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Very Shallow Dark Surface (TF12) Depleted Below Dark Surface (A Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) Other Thick Dark Surface (A12) Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) Restrictive Layer (If Observed) Remarks: SOIL PARAMETER NOT MET.

Type: Depth (inches):

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Project CHESTERFIELD - HOPEWELL 230KV REBUILD Stantec Applicant: DOMINION ENERGY VIRGINIA Section/Township/Range: City/County: CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL Subregion (LRR or MLRA): LRR P Start: State VIRGINIA 37.344021° -77.392836° B. CONNERS, A. MCINTYRE Investigator(s): 37.290017° -77.283916° Date: Soil Map Unit Name: GRITNEY FINE SANDY LOAM 12/20/2017 WETLAND BELOW FLAG 'BCJ-15'. Summary of Findings: NWI Classification Hydrophytic Vegetation is Present: Normal Circumstances: X N/A Disturbed Parameters (see Remarks): Hydric Soils are Present: Local Relief CONCAVE Wetland Hydrology is Present Problematic Parameters (see Remarks): Landform FLAT Sampled Area is within a Wetland: Atypical Climate/Hydrology (see Remarks): Slope % 0 Hydrology Parameter: Primary Indicators: Secondary Indicators: Surface Soil Cracks (B6) Surface Water (A1) Water Stained Leaves (B9) Sparsely Vegetated Concave Surface (B8) High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10) X Saturation (A3) Marl Deposits (B15) Moss Trim Lines (B16) Water Marks (B1) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Sediment Deposits (B2) X Oxidized Rhizospheres on Living Roots (C3) Crayfish Burrows (C8) Drift Deposits (B3) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) Iron Deposits (B5) Thin Muck Surface (C7) X Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) Shallow Aquitard (D3) Other X FAC-Neutral Test (D5) Sphagnum Moss (D8) HYDROLOGY PARAMETER MET. Water Depths (inches): Remarks: Surface Water: Water Table 0 Saturated soil: Vegetation Parameter: **Dominant Species** Stratum IND Non-Dominant Species Stratum IND Juncus effusus Dichanthelium dichotomum Herbaceous OBL FAC 35 Scirpus cyperinus Solidago rugosa Herbaceous OBL 10 Herbaceous Herbaceous 20 10 FAC Vine Lonicera japonica FACU Schedonorus arundinaceus Herbaceous % Dominant species FAC or wetter: 67% Prevalence Index: NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST ted using all species presen Rapid Test for Hydrophytic Vegetation: Remarks: VEGETATION PARAMETER MET. Dominance Test >50%: Prevalence Index is ≤ 3.0 : Problematic Hydrophytic Vegetation: Soil Parameter: Matrix Redox Features Color (Moist) Color (Moist) Depth (inches) % 0/0 Туре Loc Texture 0-8 2.5Y 4/1 80 10YR 5/6 20 M LOAM 8-20 2.5Y 4/1 75 10YR 5/6 20 M CLAY LOAM 10YR 5/6 5 C PL Hydric Soil Indicators: Coast Prairie Redox (A16) Redox Dark Surface (F6) Indicators for Problematic Hydric Soils Histosol (A1) Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Black Histic (A3) Sandy Gleyed Matrix (S4) Redox Depressions (F8) 1cm Muck (A9) Hydrogen Sulfide (A4) Sandy Redox (S5) Marl (F10) 2cm Muck (A10) Depleted Ochric (F11) Stratified Layers (A5) Stripped Matrix (S6) Reduced Vertic (F18) Dark Surface (S7) Iron-Manganese Masses (F12) Organic Bodies (A6) Piedmont Floodplain Soils (F19) 5cm Mucky Mineral (A7) Polyvalue Below Surface (S8) Umbric Surface (F13) Anomalous Bright Loamy Soils (F20) Muck Presence (A8) Thin Dark Surface (S9) Delta Ochric (F17) Red Parent Material (TF2) 1 cm Muck (A9) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Very Shallow Dark Surface (TF12) Depleted Below Dark Surface (Al Loamy Gleved Matrix (F2) Piedmont Floodplain Soils (F19) Other Thick Dark Surface (A12) X Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) SOIL PARAMETER MET. Restrictive Layer (If Observed) Remarks: Type Depth (inches)

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Project: CHESTERFIELD - HOPEWELL 230KV REBUILD **Stantec** Applicant DOMINION ENERGY VIRGINIA Section/Township/Range: City/County: CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL Subregion (LRR or MLRA): LRR P State VIRGINIA Start 37.344021° -77.392836° Investigator(s): B. CONNERS, A. MCINTYRE Terminus: 37.290017° -77.283916° OCHREPTS AND UDULTS, STEEP Date: Soil Map Unit Name: 12/20/2017 **Summary of Findings:** UPLAND SWALE EAST OF TOWER 211/37. Normal Circumstances: X Hydrophytic Vegetation is Present: X NWI Classification N/A Hydric Soils are Present: Disturbed Parameters (see Remarks): Local Relief CONCAVE Wetland Hydrology is Present Problematic Parameters (see Remarks): Landform DRAINAGEWAY Sampled Area is within a Wetland: Atypical Climate/Hydrology (see Remarks): Slope %: Hydrology Parameter: Primary Indicators: Secondary Indicators: Surface Soil Cracks (B6) Surface Water (A1) Sparsely Vegetated Concave Surface (B8) Water Stained Leaves (B9) High Water Table (A2) Drainage Patterns (B10) Aquatic Fauna (B13) Marl Deposits (B15) Moss Trim Lines (B16) X Saturation (A3) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Water Marks (B1) Oxidized Rhizospheres on Living Roots (C3) Crayfish Burrows (C8) Sediment Deposits (B2) Drift Deposits (B3) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) X Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) Inundation Visible on Aerial Imagery (B7) ____ Other Shallow Aquitard (D3) FAC-Neutral Test (D5) Sphagnum Moss (D8) Water Depths (inches): Remarks: HYDROLOGY PARAMETER MET. Surface Water: Water Table: Saturated soil: 4 Vegetation Parameter: Non-Dominant Species IND **Dominant Species** Stratum Stratum Tree FAC 15 15 Quercus alba Quercus rubra Tree Tree FACU Ilex opaca Tree FACU 15 15 Acer rubrum Sapling FAC Pinus taeda Herbaceous 10 Ilex opaca Juniperus virginiana Liquidambar styraciflua Sapling Shrub FAC Pteridium aquilinum Herbaceous **FACU** FACU 5 Shrub FAC FAC Ilex opaca Shrub Dichanthelium clandestinum Herbaceous FACW 25 15 Schedonorus arundinaceus Herbaceous FAC Smilax bona-nox Vine FAC 3 % Dominant species FAC or wetter: 90% Prevalence Index: NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST ted using all species presen Rapid Test for Hydrophytic Vegetation: Remarks: VEGETATION PARAMETER MET. Dominance Test >50%: Prevalence Index is < 3.0: Problematic Hydrophytic Vegetation: Soil Parameter: Matrix Redox Features Depth (inches) Color (Moist) 0/0 Color (Moist) 0/0 Type Loc Texture 0-20 2.5Y 5/3 100 LOAM Hydric Soil Indicators Redox Dark Surface (F6) Indicators for Problematic Hydric Soils Histosol (A1) Coast Prairie Redox (A16) Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Black Histic (A3) Sandy Gleyed Matrix (S4) Redox Depressions (F8) 1cm Muck (A9) Hydrogen Sulfide (A4) Sandy Redox (S5) Marl (F10) 2cm Muck (A10) Stratified Layers (A5) Stripped Matrix (S6) Depleted Ochric (F11) Reduced Vertic (F18) Piedmont Floodplain Soils (F19) Organic Bodies (A6) Dark Surface (S7) Iron-Manganese Masses (F12) Polyvalue Below Surface (S8) Umbric Surface (F13) Anomalous Bright Loamy Soils (F20) 5cm Mucky Mineral (A7) Thin Dark Surface (S9) Delta Ochric (F17) Red Parent Material (TF2) Muck Presence (A8) Loamy Mucky Mineral (F1) Very Shallow Dark Surface (TF12) 1 cm Muck (A9) Reduced Vertic (F18) Depleted Below Dark Surface (A) Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) Other Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) Thick Dark Surface (A12) SOIL PARAMETER NOT MET. Restrictive Layer (If Observed) Remarks: Type Depth (inches):

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Project: CHESTERFIELD - HOPEWELL 230KV REBUILD **Stantec** Applicant DOMINION ENERGY VIRGINIA Section/Township/Range: City/County: CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL Subregion (LRR or MLRA): LRR P VIRGINIA 37.344021° -77.392836° Investigator(s): B. CONNERS, A. MCINTYRE Terminus: 37.290017° -77.283916° Date 12/20/2017 Soil Map Unit Name: OCHREPTS AND UDULTS, STEEP Summary of Findings: WETLAND BELOW FLAG 'BCM-5' Hydrophytic Vegetation is Present: Normal Circumstances: X NWI Classification N/A Hydric Soils are Present Disturbed Parameters (see Remarks): Local Relief CONCAVE Wetland Hydrology is Present Problematic Parameters (see Remarks) Landform DRAINAGEWAY Sampled Area is within a Wetland: Atypical Climate/Hydrology (see Remarks): Slope % Hydrology Parameter: Primary Indicators: Secondary Indicators: Surface Soil Cracks (B6) Surface Water (A1) Sparsely Vegetated Concave Surface (B8) Water Stained Leaves (B9) High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10) X Saturation (A3) Marl Deposits (B15) Moss Trim Lines (B16) Hydrogen Sulfide Odor (C1) Water Marks (B1) Dry-Season Water Table (C2) Sediment Deposits (B2) X Oxidized Rhizospheres on Living Roots (C3) Cravfish Burrows (C8) Drift Deposits (B3) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) Iron Deposits (B5) Thin Muck Surface (C7) Geomorphic Position (D2) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) Other X FAC-Neutral Test (D5) Sphagnum Moss (D8) Water Depths (inches): Remarks: HYDROLOGY PARAMETER MET. Surface Water: Water Table Saturated soil: 0 Vegetation Parameter: **Dominant Species** Non-Dominant Species Stratum Stratum IND Liquidambar styraciflua Typha latifolia Herbaceous Herbaceous OBL 50 Juncus effusus 15 Herbaceous OBL Arthraxon hispidus Herbaceous 25 Prevalence Index: % Dominant species FAC or wetter: 100% NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST Calculated using all species present. Rapid Test for Hydrophytic Vegetation: Remarks: VEGETATION PARAMETER MET. Dominance Test >50%: Prevalence Index is ≤ 3.0: Problematic Hydrophytic Vegetation: Soil Parameter: Matrix Redox Features Depth (inches) Color (Moist) 0/0 Color (Moist) 0/0 Type Loc Texture 0-5 10YR 4/1 75 5YR 4/6 20 M SILTY CLAY LOAM 5YR 4/6 5 PL 5-20 10YR 5/1 5YR 4/6 20 C M SILTY CLAY LOAM 5YR 4/6 5 PL Hydric Soil Indicators: Histosol (A1) Coast Prairie Redox (A16) Redox Dark Surface (F6) Indicators for Problematic Hydric Soils Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Black Histic (A3) Sandy Gleyed Matrix (S4) Redox Depressions (F8) 1cm Muck (A9) Hydrogen Sulfide (A4) Sandy Redox (S5) Marl (F10) 2cm Muck (A10) Stripped Matrix (S6) Depleted Ochric (F11) Stratified Layers (A5) Reduced Vertic (F18) Organic Bodies (A6) Dark Surface (S7) Iron-Manganese Masses (F12) Piedmont Floodplain Soils (F19) 5cm Mucky Mineral (A7) Polyvalue Below Surface (S8) Umbric Surface (F13) Anomalous Bright Loamy Soils (F20) Muck Presence (A8) Thin Dark Surface (S9) Delta Ochric (F17) Red Parent Material (TF2) 1 cm Muck (A9) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Very Shallow Dark Surface (TF12) Depleted Below Dark Surface (A Loamy Gleved Matrix (F2) Piedmont Floodplain Soils (F19) Other Thick Dark Surface (A12) X Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) SOIL PARAMETER MET. Restrictive Layer (If Observed) Remarks: Type: Depth (inches):

Sampling Point Number: ___25__

	Project: pplicant: CHESTERE	DOM	INION ENE	WELL 230KV REBUILD ERGY VIRGINIA GE COUNTIES; CITY OF	HODEWELL		/Township/Range: (LRR or MLRA):		N/A LRR P	
: T12	State: CHESTERF		VIRG	INIA	HULLWELL	Suu, v ₂ ,	Start:		.344021° -77	
Investi	igator(s):	В. С	CONNERS, A	A. MCINTYRE			Terminus:	37.	.290017° -77	.283916°
	Date:		12/20/	2017		Soil	l Map Unit Name:	OCHREF	TS AND UE	OULTS, STEE
nary of Findings:	Vegetation is Present:	х			D BELOW FL		NWI Classificat	tion:	N/A	
5.6.0-1.6-16-17-5	ydric Soils are Present:			Disturbed Parameters (Local Re		CONCA	VE
	Hydrology is Present:		,	Problematic Parameters ((see Remarks):		Landfo		DRAINAGE	
Sampled Area	is within a Wetland:			ical Climate/Hydrology (Slope	÷ %:	2-4	
ology Parameter:										
	Prin	mary Indicators	s:					Secondary Indic il Cracks (B6)	ators:	
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Ae		Presence of Re	(B13) (B15) fide Odor (Cospheres on educed Iron eduction in 1	C1) n Living Roots (C3)			Sparsely Vo Drainage Po Moss Trim Dry-Seasor Crayfish Br Saturation V Stunted or S Geomorphi Shallow Ac FAC-Neutr	egetated Concavatterns (B10) Lines (B16) Water Table (Gurrows (C8) Visible on Aeria Stressed Plants (ce Position (D2) quitard (D3) al Test (D5)	C2) al Imagery (
							Sphagnum	Moss (D8)		
Surface Water: Water Table: Saturated soil: ation Parameter:				Remarks: HYDROL	LOGY PARAM	TETER NO	г мет.			
Dominant	Spacies	Stratum	IND	%	Non-Dor	ninant Specie	00	Stratum	IND	%
Liquidambar		Shrub	FAC	5		us effusus	es	Herbaceous	OBL	5
Dichanthelium Schedonorus ar	dichotomum	Herbaceous Herbaceous	FAC FAC	25 15		n carolinense	,	Herbaceous	FACU	5
	species FAC or wetter:		_				Prevalence Index:	3.1		
NOTE: SPECIES INDICATO	OR STATUS ACCORDING TO	O 2016 NATIONAL	L WETLAND		TION PARAM		ed using all species pre	sent.		
Dominance	e Test >50%: X ndex is ≤ 3.0:			ACHIGINS.	Tion	The Feat was				
Depth (inches)	M Color (Moist)	Iatrix	%	Color (Moist)	Redox Feat	tures Type	Loc	The Park of	Texture	C. A. S. S.
0-8	10YR 5/8		70	5YR 5/8	10	C	M		CLAY	
				10YR 4/1	20	D	M			
8-20	2.5Y 6/6		80	7.5YR 5/8	5	C	M		CLAY LO	AM
				10YR 4/3	15	D	M			
ydric Soil Indicators:										
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) 5cm Mucky Mineral (A7) Muck Presence (A8) 1 cm Muck (A9) Depleted Below Dark Sur Thick Dark Surface (A12	Sandy Mu Sandy Gle Sandy Ree Stripped M Dark Surf) Polyvalue Thin Dark Loamy M rface (A) Loamy Gl	Matrix (S6)	S1) S4) Se (S8) (F1)	Depleted I Redox Dep Marl (F10) Depleted C Iron-Mang Umbrie Su Detta Och Reduced V	Ochric (F11) ganese Masses (urface (F13)	F12) s (F19)	In	Anomalous Red Parent	(A9) (A10) fertic (F18) floodplain S Bright Loa Material (T	Soils (F19) amy Soils (F20
_ Thick Dark Surface (Matrix (12)			3 Dingin Louin,	20112 (. 20,				

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region Sampling Point Number: 26 Project: CHESTERFIELD - HOPEWELL 230KV REBUILD Stantec Applicant DOMINION ENERGY VIRGINIA Section/Township/Range City/County: CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL Subregion (LRR or MLRA): LRR P VIRGINIA Start 37.344021° -77.392836° Investigator(s) B. CONNERS, A. MCINTYRE 37.290017° -77.283916° BOURNE FINE SANDY LOAM Date Soil Map Unit Name: 12/20/2017 UPLAND IN FIELD NEAR TOWER 211/39. **Summary of Findings:** Normal Circumstances: X Hydrophytic Vegetation is Present: NWI Classification: N/A Hydric Soils are Present Disturbed Parameters (see Remarks): Local Relief NONE Wetland Hydrology is Present Problematic Parameters (see Remarks) Landform FLAT Sampled Area is within a Wetland: Atypical Climate/Hydrology (see Remarks) Slope %: 0 Hydrology Parameter: Primary Indicators: Secondary Indicators: Surface Soil Cracks (B6) Surface Water (A1) Sparsely Vegetated Concave Surface (B8) Water Stained Leaves (B9) High Water Table (A2) Drainage Patterns (B10) Aquatic Fauna (B13) Moss Trim Lines (B16) Marl Deposits (B15) Saturation (A3) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Water Marks (B1) Oxidized Rhizospheres on Living Roots (C3) Crayfish Burrows (C8) Sediment Deposits (B2) Drift Deposits (B3) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) X Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) Inundation Visible on Aerial Imagery (B7) Shallow Aquitard (D3) Other FAC-Neutral Test (D5) Sphagnum Moss (D8) Water Depths (inches): Remarks: HYDROLOGY PARAMETER NOT MET. Surface Water: Water Table >20 Saturated soil: Vegetation Parameter: **Dominant Species** IND Non-Dominant Species Stratum Stratum Dichanthelium clandestinum Schedonorus arundinaceus Herbaceous FACW FAC 65 20 Herbaceous Herbaceous FACU Solanum carolinense Dichanthelium dichotomum Herbaceous 5 FAC Lonicera japonica FACU Prevalence Index: % Dominant species FAC or wetter: 67% NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST ed using all species present Rapid Test for Hydrophytic Vegetation: Remarks: VEGETATION PARAMETER MET. Dominance Test >50%: Prevalence Index is ≤ 3.0 : Problematic Hydrophytic Vegetation: Soil Parameter: Matrix Redox Features Depth (inches) Color (Moist) 0/0 Color (Moist) 0/0 Type Loc Texture 0-3 10YR 3/2 100 LOAM 3-20 2.5Y 5/4 85 10YR 5/8 15 M FINE SANDY LOAM Hydric Soil Indicators: Indicators for Problematic Hydric Soils Histosol (A1) Coast Prairie Redox (A16) Redox Dark Surface (F6) Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Black Histic (A3) Sandy Gleyed Matrix (S4) Redox Depressions (F8) 1cm Muck (A9) Hydrogen Sulfide (A4) Sandy Redox (S5) Marl (F10) 2cm Muck (A10) Stratified Layers (A5) Stripped Matrix (S6) Depleted Ochric (F11) Reduced Vertic (F18) Piedmont Floodplain Soils (F19) Organic Bodies (A6) Dark Surface (S7) Iron-Manganese Masses (F12) Polyvalue Below Surface (S8) Umbric Surface (F13) Anomalous Bright Loamy Soils (F20) 5cm Mucky Mineral (A7) Thin Dark Surface (S9) Delta Ochric (F17) Red Parent Material (TF2) Muck Presence (A8) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Very Shallow Dark Surface (TF12) 1 cm Muck (A9) Depleted Below Dark Surface (A) Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) Other Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) Thick Dark Surface (A12) SOIL PARAMETER NOT MET. Restrictive Layer (If Observed) Remarks:

Type: Depth (inches):

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Stantec	Project: C Applicant:			WELL 230KV REBUILD RGY VIRGINIA		Section/To	ownship/Range:		N/A	
	ty/County: CHESTERFIEI				HOPEWELL				LRR P	
	State:		VIRGI			_			7.344021° -77.39283	6°
Inves	stigator(s):		B. YOUNG				Terminus:		7.290017° -77.28391	6°
	Date:		12/20/2	2017		Soil M	Iap Unit Name:		EMPORIA SOILS	
mary of Findings:						FLAG 'CNC-9'.				
	ic Vegetation is Present: Hydric Soils are Present:	X		Normal O Disturbed Parameters	Circumstances		NWI Classifica Local Re		R4SBC CONCAVE	
	nd Hydrology is Present:	X	р	roblematic Parameters			Landf		DRAINAGEWAY	,
	ea is within a Wetland:	X		cal Climate/Hydrology				ne %:	0-1	
ology Parameter:			тијри	ear crimaterry are regy	(See Termanis)		отер	70.		
B/	Primar	y Indicators:	e T					Secondary India	cators:	
Surface Water (A1) High Water Table (A2) X Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on A	Aq Mis X Hy Ox Pro Pro Re Th	esence of Red cent Iron Red in Muck Surfa	B13) B15) de Odor (C spheres on duced Iron (duction in T	1) Living Roots (C3)			Sparsely V Drainage I Moss Trin Dry-Seaso Crayfish B Saturation Stunted or X Geomorph Shallow A X FAC-Neut		C2) al Imagery (C9) (D1)	
Zeten Dender Goelen)				n III/nno	OCVDADA	METER MET.	Sphagnum	Moss (D8)		
ater Depths (inches): Surface Water Water Table Saturated soil				Remarks: HYDRO	LOGI PARA	METER MET.				
Di	40	C44 [IND		N D-			I Starten	I IND I of	_
Dominan Magnolia		Stratum Tree	IND FACW	10		minant Species olia virginiana		Stratum Shrub	IND % FACW 10	-
Liquidamba		Tree	FAC	10		verticillata		Shrub	FACW 10	
Alnus se		Sapling	FACW	20	Ros	sa palustris		Shrub	OBL 10	
Liquidamba		Sapling	FAC	15		urus cernuus		Herbaceous	OBL 15	
Ilex o		Sapling	FAC	10		lium dichotomum	1	Herbaceous	FAC 15	
Almus se		Shrub	FACW	40	Ca	ırex lurida		Herbaceous	OBL 2	
Microstegiu		Ierbaceous	FAC	75						
Lonicera	japonica	Vine	FACU	5						
Gelsemium s	sempervirens	Vine	FAC	5						
Geisemin s	emperimens	11110	TAC							
		- 1								
		1								
		- 1								
										1
		1							1 1	- 1
									1 1	
1										
			1						1 1	
1		1								
0/ D :		000/				n				_
	species FAC or wetter: TOR STATUS ACCORDING TO 20	89% 016 NATIONAL	WETLAND P	LANT LIST			valence Index: sing all species pro		•	
Rapid Test for Hydrophyt	tic Vegetation:			Remarks: VEGETA	TION PARA	METER MET.				
Dominano	ce Test >50%: X									
Prevalence 1	Index is ≤ 3.0 : X									
Problematic Hydrophyt										
arameter:	Matr	ix			Redox Fea	tures				
Depth (inches)	Color (Moist)		%	Color (Moist)	%	Type	Loc		Texture	
0-20	10YR 5/1		80	2.5Y 6/1	20	INCLUSION	M	SAN	DY MUCKY LO	AM
dric Soil Indicators:										
Histosol (A1)	Coast Prairie	Redox (A16))	Redox Da	rk Surface (F6)	1 1	ndicators for Pro	oblematic Hydric	Soils
Histic Epipedon (A2)		y Mineral (S1			Dark Surface (1		ooremane rijarie i	,ono
						(1)				
Black Histic (A3)	Sandy Gleye	d Matrix (S4))	Redox De	pressions (F8)			lcm Muck	(A9)	
Hydrogen Sulfide (A4)	Sandy Redox	(S5)		Marl (F10)			2cm Muck	(A10)	
Stratified Layers (A5)	Stripped Mat			Depleted (Ochric (F11)			Reduced V		
						(F10)				
Organic Bodies (A6)	Dark Surface				ganese Masses	(112)			Floodplain Soils (F	
5cm Mucky Mineral (A'	 Polyvalue Be 	elow Surface	(S8)	Umbric Su	ırface (F13)			Anomalous	s Bright Loamy So	ils (F2
Muck Presence (A8)	Thin Dark St	irface (S9)		Delta Och	ric (F17)			Red Parent	Material (TF2)	
1 cm Muck (A9)		y Mineral (F	1)		/ertic (F18)		1			TELO
									ow Dark Surface (1112)
_ Depleted Below Dark St		ed Matrix (F2	.)		Floodplain Soi			Other		
Thick Dark Surface (A1	 Z Depleted Ma 	trix (F3)		Anomalou	s Bright Loam	y Soils (F20)				
Restrictive Layer (If Obs	served)			Remarks: SOIL PA	RAMETER M	IET.				
Type:			- 1							

Sampling Point Number: 28 Project: CHESTERFIELD - HOPEWELL 230KV REBUILD (Stantec Section/Township/Range: Applicant: DOMINION ENERGY VIRGINIA Subregion (LRR or MLRA): City/County: CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL LRR P State VIRGINIA Start 37.344021° -77.392836° Investigator(s): B. YOUNG, C. NICE Terminus 37.290017° -77.283916° Date Soil Map Unit Name: Summary of Findings: WETLAND BELOW 'CND' LINE. Hydrophytic Vegetation is Present: Normal Circumstances: X NWI Classification N/A Hydric Soils are Present: Disturbed Parameters (see Remarks): Local Relief: CONCAVE Wetland Hydrology is Present: Landform: Problematic Parameters (see Remarks): DRAINAGEWAY Sampled Area is within a Wetland: Atypical Climate/Hydrology (see Remarks): Slope % 0-2 Hydrology Parameter: Primary Indicators: Secondary Indicators. Surface Soil Cracks (B6) Surface Water (A1) Water Stained Leaves (B9) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) High Water Table (A2) Aquatic Fauna (B13) X Saturation (A3) Marl Deposits (B15) Moss Trim Lines (B16) Water Marks (B1) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) Iron Deposits (B5) Thin Muck Surface (C7) Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) Other Shallow Aquitard (D3) FAC-Neutral Test (D5) Sphagnum Moss (D8) Water Depths (inches): HYDROLOGY PARAMETER MET. Surface Water: Water Table: Saturated soil: Vegetation Parameter: Dominant Species Stratum IND Non-Dominant Species Stratum IND Herbaceous OBL 50 Dichanthelium scabriusculum Herbaceous OBL Lonicera japonica FACU Dichanthelium dichotomum Herbaceous FAC 10 Lespedeza cuneata Herbaceous FACU 10 FAC Schedonorus arundinaceus Herbaceous Solidago altissima Rubus argutus Herbaceous Herbaceous FACU 5 2 FAC 50% % Dominant species FAC or wetter: Prevalence Index: NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST Calculated using all species pres Rapid Test for Hydrophytic Vegetation: Remarks: VEGETATION PARAMETER MET. Dominance Test >50% Prevalence Index is ≤ 3.0 : Problematic Hydrophytic Vegetation: Soil Parameter: Matrix Redox Features Color (Moist) Color (Moist) Depth (inches) % % Type Loc Texture 0-1 10YR 3/3 100 SANDY LOAM 1-12 10YR 6/1 90 10YR 5/8 M SANDY CLAY LOAM M 10YR 7/8 5 10YR 5/1 SANDY CLAY LOAM 12-20 80 7.5YR 5/8 20 M Hydric Soil Indicators: Histosol (A1) Coast Prairie Redox (A16) Redox Dark Surface (F6) Indicators for Problematic Hydric Soils Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Black Histic (A3) Sandy Gleyed Matrix (S4) Redox Depressions (F8) 1cm Muck (A9) Hydrogen Sulfide (A4) Sandy Redox (S5) Marl (F10) 2cm Muck (A10) Stratified Layers (A5) Stripped Matrix (S6) Depleted Ochric (F11) Reduced Vertic (F18) Organic Bodies (A6) Dark Surface (S7) Iron-Manganese Masses (F12) Piedmont Floodplain Soils (F19) 5cm Mucky Mineral (A7) Polyvalue Below Surface (S8) Umbric Surface (F13) Anomalous Bright Loamy Soils (F20) Thin Dark Surface (S9) Muck Presence (A8) Delta Ochric (F17) Red Parent Material (TF2) 1 cm Muck (A9) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Very Shallow Dark Surface (TF12) Depleted Below Dark Surface (A Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) Other Thick Dark Surface (A12) X Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) Restrictive Layer (If Observed) Remarks: SOIL PARAMETER MET.

Type Depth (inches):

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

CHESTERFIELD - HOPEWELL 230KV REBUILD Project: Stantec Section/Township/Range Applicant: DOMINION ENERGY VIRGINIA Subregion (LRR or MLRA): City/County: CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL LRR P State VIRGINIA Start 37.344021° -77.392836° Investigator(s): B. YOUNG, C. NICE Terminus 37.290017° -77.283916° Soil Map Unit Name: Date: Summary of Findings: UPLAND ABOVE LINE "CND". Hydrophytic Vegetation is Present: Normal Circumstances: X NWI Classification: X N/A Disturbed Parameters (see Remarks): Local Relief CONCAVE Hydric Soils are Present: Wetland Hydrology is Present Landform: DRAINAGEWAY Problematic Parameters (see Remarks): Sampled Area is within a Wetland: Slope % Atypical Climate/Hydrology (see Remarks): 4-6 Hydrology Parameter: Primary Indicators: Secondary Indicators Surface Soil Cracks (B6) Surface Water (A1) Sparsely Vegetated Concave Surface (B8) Water Stained Leaves (B9) High Water Table (A2) Drainage Patterns (B10) Aquatic Fauna (B13) Moss Trim Lines (B16) Saturation (A3) Marl Deposits (B15) Dry-Season Water Table (C2) Water Marks (B1) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) Iron Deposits (B5) Thin Muck Surface (C7) Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) Other Shallow Aquitard (D3) X FAC-Neutral Test (D5) Sphagnum Moss (D8) HYDROLOGY PARAMETER MET. Water Depths (inches): Remarks: Surface Water Water Table Saturated soil: >20 Vegetation Parameter: IND Non-Dominant Species Stratum IND **Dominant Species** Stratum Solidago altissima Herbaceous FACU Phytolacca americana Herbaceous FACU Schedonorus arundinaceus Herbaceous 15 Rubus argutus Herbaceous FAC FAC Andropogon virginicus Asplenium platyneuron Dichanthelium scoparium Herbaceous FACW 10 Herbaceous FAC Dichanthelium scabriusculum 10 OBL Herbaceous FACU Herbaceous OBI. Juncus effusus Herbaceous 10 Prevalence Index: % Dominant species FAC or wetter: 80% NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST Calculated using all species present VEGETATION PARAMETER MET. Rapid Test for Hydrophytic Vegetation: Remarks: Dominance Test >50%: Prevalence Index is ≤ 3.0 : Problematic Hydrophytic Vegetation: Soil Parameter: Matrix Redox Features Color (Moist) Color (Moist) % Depth (inches) % Type Loc Texture 0-4 10YR 4/2 100 SANDY LOAM 4-12 2.5Y 5/4 100 SANDY CLAY LOAM 10 10YR 5/4 7.5YR 6/8 M SANDY CLAY LOAM 12-20 85 7.5YR 5/1 D M Hydric Soil Indicators: Histosol (A1) Coast Prairie Redox (A16) Redox Dark Surface (F6) Indicators for Problematic Hydric Soils Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Black Histic (A3) Sandy Gleyed Matrix (S4) Redox Depressions (F8) 1cm Muck (A9) Hydrogen Sulfide (A4) Sandy Redox (S5) Marl (F10) 2cm Muck (A10) Stratified Layers (A5) Stripped Matrix (S6) Depleted Ochric (F11) Reduced Vertic (F18) Organic Bodies (A6) Dark Surface (S7) Iron-Manganese Masses (F12) Piedmont Floodplain Soils (F19) Umbric Surface (F13) Anomalous Bright Loamy Soils (F20) 5cm Mucky Mineral (A7) Polyvalue Below Surface (S8) Thin Dark Surface (S9) Delta Ochric (F17) Red Parent Material (TF2) Muck Presence (A8) Loamy Mucky Mineral (F1) Very Shallow Dark Surface (TF12) 1 cm Muck (A9) Reduced Vertic (F18) Depleted Below Dark Surface (A) Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) Other Thick Dark Surface (A12) Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) Restrictive Layer (If Observed) Remarks: SOIL PARAMETER NOT MET. Type:

Depth (inches):

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

CHESTERFIELD - HOPEWELL 230KV REBUILD Project: (Stantec Section/Township/Range: Applicant: DOMINION ENERGY VIRGINIA City/County: CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL Subregion (LRR or MLRA): LRR P State VIRGINIA Start 37.344021° -77.392836° Investigator(s) B. YOUNG, C. NICE Terminus 37.290017° -77.283916° Soil Map Unit Name: Date Summary of Findings: WETLAND BELOW FLAG 'CNE-8'. Hydrophytic Vegetation is Present: Normal Circumstances: X NWI Classification: N/A Hydric Soils are Present Disturbed Parameters (see Remarks): CONCAVE Landform: Wetland Hydrology is Present Problematic Parameters (see Remarks): DRAINAGEWAY Sampled Area is within a Wetland: Atypical Climate/Hydrology (see Remarks) Slope %: 0-3 **Hydrology Parameter:** Primary Indicators: Secondary Indicators: Surface Soil Cracks (B6) Surface Water (A1) Water Stained Leaves (B9) Sparsely Vegetated Concave Surface (B8) High Water Table (A2) Aquatic Fauna (B13) X Drainage Patterns (B10) X Saturation (A3) Marl Deposits (B15) Moss Trim Lines (B16) Water Marks (B1) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) X Crayfish Burrows (C8) Drift Deposits (B3) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) Iron Deposits (B5) Thin Muck Surface (C7) X Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) Shallow Aquitard (D3) X FAC-Neutral Test (D5) Sphagnum Moss (D8) Water Depths (inches): HYDROLOGY PARAMETER MET. Surface Water: Water Table: __ Saturated soil: 13 Vegetation Parameter: **Dominant Species** Stratum IND 0/0 Non-Dominant Species Stratum IND Microstegium vimineum Herbaceous FAC Rubus argutus Herbaceous FAC Dulichium arundinaceum Herbaceous Carex lurida Herbaceous OBL 10 Eupatorium capillifolium Lonicera japonica Vine FACU Herbaceous FACU Scirpus cyperinus Herbaceous OBL Juncus effusus Andropogon virginicus Herbaceous Herbaceous OBI. 3 FAC 3 % Dominant species FAC or wetter: 67% Prevalence Index: NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST Calculated using all species present. Rapid Test for Hydrophytic Vegetation: Remarks: VEGETATION PARAMETER MET. Dominance Test >50%: Prevalence Index is ≤ 3.0: UNIDENTIFIED DOMINANT SPECIES OF CAREX (15%) PRESENT. Problematic Hydrophytic Vegetation: Soil Parameter: Matrix Redox Features Depth (inches) Color (Moist) Color (Moist) % Type Loc Texture 0-1 10YR 3/2 100 SANDY LOAM 10YR 7/8 M 1-6 10YR 5/2 98 LOAMY SAND 100 LOAMY SAND 6-20 10YR 6/1 Hydric Soil Indicators: Histosol (A1) Coast Prairie Redox (A16) Redox Dark Surface (F6) Indicators for Problematic Hydric Soils Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Black Histic (A3) Sandy Gleyed Matrix (S4) Redox Depressions (F8) 1cm Muck (A9) Hydrogen Sulfide (A4) Sandy Redox (S5) Marl (F10) 2cm Muck (A10) Stratified Layers (A5) Stripped Matrix (S6) Depleted Ochric (F11) Reduced Vertic (F18) Organic Bodies (A6) Dark Surface (S7) Iron-Manganese Masses (F12) Piedmont Floodplain Soils (F19) 5cm Mucky Mineral (A7) Polyvalue Below Surface (S8) Umbric Surface (F13) Anomalous Bright Loamy Soils (F20) Muck Presence (A8) Thin Dark Surface (S9) Delta Ochric (F17) Red Parent Material (TF2) 1 cm Muck (A9) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Very Shallow Dark Surface (TF12) Depleted Below Dark Surface (A) Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) Other Thick Dark Surface (A12) X Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) Restrictive Layer (If Observed) Remarks: SOIL PARAMETER MET. Type: Depth (inches):

Sampling Point Number: 31

•	Project:	CHESTE	RFIELD - HOPE	WELL 230KV REI	BUILD				
	pplicant:			RGY VIRGINIA		— · · · · · · · · · · · · · · · · · · ·	wnship/Range:		N/A
City	/County: CHES	TERFIELD AND	PRINCE GEOR		ITY OF HOPEWELL	_ Subregion (LI	RR or MLRA):		LRR P 344021° -77.392836°
Invest	igator(s):		B. YOUNG			_			290017° -77.283916°
	Date:		12/20/			Soil M	ap Unit Name:		RIA FINE SANDY LOAM
Summary of Findings:				W	ETLAND BELOW	ELAC 'CNU.5'			
	Vegetation is Pre	esent: X	T		ormal Circumstances		NWI Classificati	ion:	N/A
	ydric Soils are Pre]	Disturbed Parar	meters (see Remarks)	:	Local Rel	lief:	CONCAVE
	Hydrology is Pre		1		meters (see Remarks)		Landfo		SLOPE
	a is within a Wet	land: X	Atyp	ical Climate/Hydi	rology (see Remarks)	:	Slope	%:	1-3
Hydrology Parameter:		Primary Indic	ators:		· · · · · · · · · · · · · · · · · · ·		S	econdary Indic	ators:
						_		l Cracks (B6)	
Surface Water (A1)			ined Leaves (B9	9)		-		egetated Concav	e Surface (B8)
High Water Table (A2)			auna (B13)			-		atterns (B10)	
Saturation (A3) Water Marks (B1)		Marl Depo	Sulfide Odor (C	71)		-	Moss Trim Dry-Season	Water Table (72)
Sediment Deposits (B2)				Living Roots (C	3)	-	Crayfish Bu		
Drift Deposits (B3)			of Reduced Iron			1 :	Saturation \	Visible on Aeria	l Imagery (C9)
Algal Mat or Crust (B4)				Tilled Soils (C6)		-		Stressed Plants (D1)
Iron Deposits (B5)			k Surface (C7)			-	X Geomorphic		
Inundation Visible on A	erial Imagery (B7)	Other				-	X FAC-Neutra		
						-	Sphagnum I		
Water Depths (inches):				Remarks: HY	YDROLOGY PARA	METER MET.	op.us.	1000 (2-0)	
Surface Water:									
Water Table:	- 20								
Saturated soil: Vegetation Parameter:	>20								
vegetation rarameter.									No. of the last of
Dominant		Stratu		%		ominant Species		Stratum	IND %
Dichantheliun Juncus e		Herbace Herbace		20 15		arex lurida ogon virginicus		Herbaceous Herbaceous	OBL 10 FAC 5
	.0				Glech	oma hederacea		Herbaceous	FACU 5
					Se	taria faberi		Herbaceous	UPL 3
							-		
~									
	species FAC or w						valence Index:	2.0	
NOTE: SPECIES INDICAT Rapid Test for Hydrophyti		X	ONAL WETLAND		GETATION PARA		sing all species pres	sent.	
	e Test >50%:	X		Nemaiks. VE	OLIATION FARA	CHEIER MEI.			
Prevalence In	ndex is ≤ 3.0:	X							
Problematic Hydrophyti	c Vegetation:								
Soil Parameter:									
on I arameter.		Matrix		Γ	Redox Fe	atures		TO BE STOR	
Depth (inches)	Color (%	Color (Mo		Type	Loc		Texture
0-2	10YR		100						LOAM
2-12	5Y	6/1	75	5Y 7/1		INCLUSION	M		SANDY LOAM
12.16	,,,,	5/2	0.5	10YR 5		С	M		SANDY LOAM
12-15 15-20	5Y :		95 83	7.5YR 5 7.5YR 6		C	M M		LOAMY SAND
Hydric Soil Indicators:	1011		35	7.5110					
Histosol (A1)	Coa	st Prairie Redox	(A16)	Rec	dox Dark Surface (F6	5)	In	dicators for Pre	oblematic Hydric Soils
Histic Epipedon (A2)		dy Mucky Mine			pleted Dark Surface				
Black Histic (A3)		dy Gleyed Matri	ix (S4)		dox Depressions (F8))	-	lcm Muck	
Hydrogen Sulfide (A4)		dy Redox (S5)	`		rl (F10) pleted Ochric (F11)		-	2cm Muck Reduced V	
Organic Bodies (A6)		pped Matrix (S6 k Surface (S7)	,		n-Manganese Masses	(F12)	-		Toodplain Soils (F19)
5cm Mucky Mineral (A7		value Below Su	rface (S8)		nbric Surface (F13)	/	-		Bright Loamy Soils (F20
Muck Presence (A8)		n Dark Surface (lta Ochric (F17)				Material (TF2)
1 cm Muck (A9)	Loa	my Mucky Mine		Rec	duced Vertic (F18)				ow Dark Surface (TF12)
Depleted Below Dark Su		my Gleyed Mati			dmont Floodplain So			Other	
Thick Dark Surface (A12	2) X Dep	oleted Matrix (F3	3)	An	omalous Bright Loan	ny Soils (F20)			
					H DADAMETED				

2% 7.5YR 5/8 CPL PRESENT FROM 15"-20".

Type: Depth (inches):

Sampling Point Number: 32

					UPLAND A Normal Circ Parameters (see Parameters (see //Hydrology (see	BOVE FL umstances: Remarks): Remarks):	Start: 37.344021° -77.392836° Terminus: 37.290017° -77.283916° Soil Map Unit Name: EMPORIA FINE SANDY LO FLAG 'CNH-5'. Local Relief: CONCAVE Ks): Landform: SLOPE Slope %: 2-4 Secondary Indicators: Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B16) Moss Trim Lines (B16) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)					
Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on A Water Depths (inches): Surface Water.	erial Imagery (B7)	Recent Iron Thin Muck S Other		Remarks:		GY PARAN	METER MET.	X Geomorph Shallow A X FAC-Neut	Stressed Plants ic Position (D2) quitard (D3) ral Test (D5) Moss (D8)			
Water Table: Saturated soil:												
Vegetation Parameter:												
Pinus Dichanthelius	Dominant Species Stratum INI			5 Glechoma hederacea Herbaceous I 25 Solidago altissima Herbaceous I 15 Schedonorus arundinaceus Herbaceous I Eupatorium capillifolium Herbaceous I						FACU FACU FACU FACU FACU FACU	% 10 10 5 5 3	
NOTE: SPECIES INDICA' Rapid Test for Hydrophyt Dominane Prevalence I Problematic Hydrophyt	ce Test >50%: X Index is ≤ 3.0:		AL WETLAND	Remarks:	VEGETATI	ON PARA		evalence Index: using all species pr				
Soil Parameter:	N	Iatrix		T		Redox Fea	tures		STATE OF STA			0.00
Depth (inches)	Color (Mois		%	Colo	or (Moist)	%	Туре	Loc		Textur		
0-3 3-20	2.5Y 4/2 10YR 5/6		100 100							SANDY LO		
3-20	101K 5/6		100							SAMPT L	JAIVI	
Thirdein Call Tadi				L								
Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) Sem Mucky Mineral (A7) Muck Presence (A8) I cm Muck (A9) Depleted Below Dark Surface (A Loamy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) Polyvalue Below Surface (S8) Thin Dark Surface (S9) Loamy Mucky Mineral (F1) Depleted Below Dark Surface (A Loamy Gleyed Matrix (F2) Depleted Matrix (F3)			Redox Dark Surface (F6) Depleted Dark Surface (F7) Redox Depressions (F8) Marl (F10) Depleted Ochric (F11) Iron-Manganese Masses (F12) Umbric Surface (F13) Delta Ochric (F17) Reduced Vertic (F18) Piedmont Floodplain Soils (F19) Anomalous Bright Loamy Soils (F20) Indicators for Problematic Hyst Indicators for Indi					Soils (F19) amy Soils (F2 (F2)	.0)			
Restrictive Layer (If Observed) Type: Depth (inches):				Remarks:	SOIL PARA	METER N	ОТ МЕТ.					

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

•	Project:	CHESTER	FIELD - HOPE	WELL 230KV REBUILD							
Stantec	Applicant:		DOMINION ENERGY VIRGINIA CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL						N/A		
	City/County: _ State:		PRINCE GEORG VIRG		IOPEWELL	Subregion (LF	RR or MLRA): _		LRR P .344021° -77.3	0283%	
	Investigator(s):		B. YOUNG				Terminus:		.290017° -77.2		
	Date:		12/21/			Soil Ma	ap Unit Name:		RIA FINE SAN		
Summary of Findings	•			UPLAND	ABOVE FLA	AC 'RVI-16'.					
	drophytic Vegetatio	on is Present:			ircumstances:		NWI Classificati	ion:	N/A		
	Hydric Soils	s are Present:		Disturbed Parameters (s	see Remarks):		Local Rel	lief:	CONVEX	<	
	Wetland Hydrolog			Problematic Parameters (s			Landfo		SLOPE		
Samp Hydrology Parameter	oled Area is within	a Wetland:	Atypi	ical Climate/Hydrology (s	ee Remarks):		Slope	: %:	2-4		
nydrology raramete.		Primary Indicat	tors:				S	Secondary Indic	ators:		
Surface Water (High Water Tab Saturation (A3) Water Marks (B Sediment Depos Drift Deposits (I Algal Mat or Cr Iron Deposits (E Inundation Visit	ole (A2) 31) sits (B2) B3) rust (B4) 35) ble on Aerial Image	Water Stain Aquatic Fau Marl Depos Hydrogen S Oxidized Rl Presence of Recent Iron Thin Muck	ed Leaves (B9 ina (B13) its (B15) fulfide Odor (C hizospheres on Reduced Iron	C1) Living Roots (C3) (C4) Tilled Soils (C6)	OGY PARAM	TETER NOT M	Surface Soi Sparsely Ve Drainage Pf Moss Trim Dry-Season Crayfish Bu Saturation V Stunted or S Geomorphic Shallow Aq FAC-Neutr Sphagnum 1	Il Cracks (B6) egetated Concavatterns (B10) Lines (B16) Il Water Table (Currows (C8) Visible on Aeria Stressed Plants (c Position (D2) quitard (D3) al Test (D5)	ve Surface (B C2)		
Surface Wate	e Water:er Table:										
Vegetation Parameter											
	ominant Species	Stratum	IND	%	N D	ninant Species		Stratum	IND	0/]	
Gle Dicha Le Ands NOTE: SPECIES Rapid Test for Hys	echoma hederacea aunthelium scopariu espedeza cumeata fropogon virginicus ominant species FA s indicator status drophytic Vegetati ominance Test >50	AC or wetter: 50% GACCORDING TO 2016 NATIO OOT: 19%:	IS FACU IS FACU IS FACU IS FACU FAC	20 15 10 10 10	Eupatoriu. Solida Setar Rubu	m capillifolium go altissima ria pumila us argutus	valence Index:	Herbaceous Herbaceous Herbaceous Herbaceous	FACU FACU FAC FAC FAC	% 5 5 3 3 3	
	valence Index is ≤ 3 drophytic Vegetation										
Soil Parameter:											
B. L.	2002	Matrix	0/	C.I. (M.I.)	Redox Feat		1		T. T.	医工程程度	
Depth (inches) 0-8		Color (Moist) 10YR 4/3	100	Color (Moist)	%	Туре	Loc	SAN	Texture NDY CLAY		
8-20		10YR 6/6	90	10YR 5/2	10	D	M		NDY CLAY		
Hydric Soil Indicator Histosol (A1) Histic Epipedon Black Histic (A3 Hydrogen Sulfid Stratified Layers Organic Bodies (5cm Mucky Min Muck Presence (1 cm Muck (A9) Depleted Below Thick Dark Surfa	(A2)	Coast Prairie Redox (Sandy Mucky Minera Sandy Gleyed Matrix Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) Polyvalue Below Surf Thin Dark Surface (S6 Loamy Mucky Minera Loamy Gleyed Matrix Depleted Matrix (F3)	(S4) face (S8) 9) al (F1)	Depleted De Redox Depr Marl (F10) Depleted Ot Iron-Manga Umbric Surr Delta Ochri Reduced Ve	face (F13) fc (F17)	F12) s (F19)	In	Anomalous Red Parent	(A9) (A10) ertic (F18) Floodplain So	iils (F19) ny Soils (F20) ⁷ 2)	
Restrictive Layer	r (If Observed) Type:			Remarks: SOIL PAR	AMETER NO	от мет.					

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Stantec Ci Investor Summary of Findings: Hydrophyt Wetlar Sampled Ar Hydrology Parameter: Surface Water (A1) High Water Table (A2) X Saturation (A3) Water Marks (B1) Sediment Deposits (B2		VETLAND I Normal Circ rameters (see rameters (see rameters (see drology (see	BELOW F umstances: Remarks): Remarks):		D						
Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on A Water Depths (inches): Surface Water	Aerial Imagery (B7)	(C4) Tilled Soils (Co		GY PARA!	Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) X FAC-Neutral Test (D5) Sphagnum Moss (D8)						
Water Table Saturated soil											
Vegetation Parameter:											
Dominant Species Stratum IND				Setaria pumila Rubus arguns Herbaceous FAC FAC Prevalence Index: 2.3						OBL FAC FACW FAC	9% 10 10 5 3 3
Soil Parameter:											
Donth (insk)		Matrix	0/	Calana		Redox Fea		T		T-	
Depth (inches) 0-1	Color (Mois 10YR 2/2	1)	100	Color (N	vioist)	%	Туре	Loc		LOAN	
1-9	10YR 5/2		90	10YR	6/8	10	С	M SANDY CLAY LOAM			
9-20	2.5Y 7/6		100						SAN	NDY CLAY	Y LOAM
Hydric Soil Indicators:		airie Redox (
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) 5cm Mucky Mineral (A Muck Presence (A8) 1 cm Muck (A9) Depleted Below Dark S Thick Dark Surface (A1	Redox Dark Surface (F6) Depleted Dark Surface (F7) Redox Depressions (F8) Marl (F10) Depleted Ochric (F11) Iron-Manganese Masses (F12) Umbric Surface (F13) Delta Ochric (F17) Reduced Vertic (F18) Piedmont Floodplain Soils (F19) Anomalous Bright Loamy Soils (F20) Indicators for Problematic Hy Zem Muck (A9) Zem Muck (A10) Reduced Vertic (F18) Piedmont Floodplain Soils (F12) Very Shallow Dark Surface (F13) Other						Soils (F19) umy Soils (F20) (F2)				
Restrictive Layer (If Ob.				Remarks: S	OIL PARAM	METER M	ET.				
Type: Depth (inches):											

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Project: CHESTERFIELD - HOPEWELL 230KV REBUILD **Stantec** Section/Township/Range Applicant DOMINION ENERGY VIRGINIA City/County: CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL Subregion (LRR or MLRA): LRR P State Start 37.344021° -77.392836° VIRGINIA B. YOUNG, C. NICE Terminus 37.290017° -77.283916° Investigator(s) Date: 12/21/2017 Soil Map Unit Name: SLAGLE SANDY LOAM Summary of Findings: WETLAND BELOW FLAG 'BYL-4'. Hydrophytic Vegetation is Present: NWI Classification Normal Circumstances: X N/A Hydric Soils are Present: Disturbed Parameters (see Remarks): Local Relief CONCAVE Wetland Hydrology is Present Problematic Parameters (see Remarks): Landform X DRAINAGEWAY Sampled Area is within a Wetland: Atypical Climate/Hydrology (see Remarks): Slope % 0-2 Hydrology Parameter: Primary Indicators: Secondary Indicators: Surface Soil Cracks (B6) Surface Water (A1) Sparsely Vegetated Concave Surface (B8) Water Stained Leaves (B9) High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10) X Saturation (A3) Marl Deposits (B15) Moss Trim Lines (B16) Water Marks (B1) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Crayfish Burrows (C8) Drift Deposits (B3) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) Iron Deposits (B5) Thin Muck Surface (C7) X Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) Shallow Aquitard (D3) Other X FAC-Neutral Test (D5) Sphagnum Moss (D8) HYDROLOGY PARAMETER MET. Water Depths (inches): Remarks: Surface Water Water Table Saturated soil: Vegetation Parameter: IND Non-Dominant Species IND **Dominant Species** Stratum Stratum Dichanthelium scoparium Juncus effusus Herbaceo FACW 45 Rhexia virgin Herbaceous FACW 15 5 3 Solidago rugosa Herbaceous Herbaceous OBL 20 FAC Rubus argutus Herbaceous FAC % Dominant species FAC or wetter: 100% Prevalence Index: NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST Rapid Test for Hydrophytic Vegetation: VEGETATION PARAMETER MET. Remarks Dominance Test >50%: Prevalence Index is ≤ 3.0 : Problematic Hydrophytic Vegetation: Soil Parameter: Matrix Redox Features Color (Moist) Color (Moist) Depth (inches) % % Type Loc Texture 0-2 10YR 5/1 93 10YR 3/6 PL CLAY LOAM 7.5YR 4/6 M 2-10 10YR 6/1 90 10 CLAY LOAM 10YR 6/8 C M 10-20 2.5Y 7/2 80 10YR 6/8 20 C M CLAY LOAM Hydric Soil Indicators: Histosol (A1) Coast Prairie Redox (A16) Redox Dark Surface (F6) Indicators for Problematic Hydric Soils Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Black Histic (A3) Sandy Gleyed Matrix (S4) Redox Depressions (F8) 1cm Muck (A9) Hydrogen Sulfide (A4) Sandy Redox (S5) 2cm Muck (A10) Marl (F10) Stratified Layers (A5) Stripped Matrix (S6) Depleted Ochric (F11) Reduced Vertic (F18) Organic Bodies (A6) Dark Surface (S7) Iron-Manganese Masses (F12) Piedmont Floodplain Soils (F19) 5cm Mucky Mineral (A7) Polyvalue Below Surface (S8) Umbric Surface (F13) Anomalous Bright Loamy Soils (F20) Muck Presence (A8) Thin Dark Surface (S9) Delta Ochric (F17) Red Parent Material (TF2) 1 cm Muck (A9) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Very Shallow Dark Surface (TF12) Depleted Below Dark Surface (A) Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) Other Thick Dark Surface (A12) X Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) SOIL PARAMETER MET. Restrictive Layer (If Observed) Remarks: Type: Depth (inches):

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Project: CHESTERFIELD - HOPEWELL 230KV REBUILD Stantec Applicant: DOMINION ENERGY VIRGINIA Section/Township/Range City/County: CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL Subregion (LRR or MLRA): LRR P State VIRGINIA Start 37.344021° -77.392836° Investigator(s): B. YOUNG, C. NICE Terminus 37.290017° -77.283916° Date: 12/21/2017 Soil Map Unit Name: **EMPORIA SOILS Summary of Findings:** WETLAND BELOW FLAG 'BYM-4'. Hydrophytic Vegetation is Present Normal Circumstances: X NWI Classification PSS1E Hydric Soils are Present Disturbed Parameters (see Remarks): Local Relief CONCAVE Wetland Hydrology is Present Problematic Parameters (see Remarks) Landform DRAINAGEWAY Sampled Area is within a Wetland: Atypical Climate/Hydrology (see Remarks) Slope %: 0-1 Hydrology Parameter: Primary Indicators: Secondary Indicators: Surface Soil Cracks (B6) Surface Water (A1) Water Stained Leaves (B9) Sparsely Vegetated Concave Surface (B8) High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10) X Saturation (A3) Marl Deposits (B15) Moss Trim Lines (B16) Water Marks (B1) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Crayfish Burrows (C8) Drift Deposits (B3) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) Iron Deposits (B5) Thin Muck Surface (C7) X Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) Shallow Aquitard (D3) Other X FAC-Neutral Test (D5) Sphagnum Moss (D8) HYDROLOGY PARAMETER MET. Water Depths (inches): Remarks: Surface Water: Water Table: Saturated soil: 0 Vegetation Parameter: **Dominant Species** Stratum Non-Dominant Species Stratum Panicum virgatu Carex lurida Herbaceo FAC OBL 25 Herbaceous Herbaceous FAC 10 Herbaceous 15 Juncus effusus OBL 5 Rumex crispus Herbaceous Dulichium arundinaceum Herbaceous OBL % Dominant species FAC or wetter: 100% Prevalence Index: NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST ed using all species present Rapid Test for Hydrophytic Vegetation: Remarks: VEGETATION PARAMETER MET. Dominance Test >50%: Prevalence Index is ≤ 3.0 : Problematic Hydrophytic Vegetation: Soil Parameter: Matrix Redox Features Color (Moist) Color (Moist) Depth (inches) % % Type Loc Texture 0-5 10YR 4/1 98 10YR 3/6 M SILT LOAM 5-20 10Y 5/1 100 SILT LOAM Hydric Soil Indicators: Histosol (A1) Coast Prairie Redox (A16) Redox Dark Surface (F6) Indicators for Problematic Hydric Soils Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Black Histic (A3) Sandy Gleyed Matrix (S4) Redox Depressions (F8) 1cm Muck (A9) Hydrogen Sulfide (A4) Sandy Redox (S5) Marl (F10) 2cm Muck (A10) Stratified Layers (A5) Stripped Matrix (S6) Depleted Ochric (F11) Reduced Vertic (F18) Dark Surface (S7) Organic Bodies (A6) Iron-Manganese Masses (F12) Piedmont Floodplain Soils (F19) 5cm Mucky Mineral (A7) Polyvalue Below Surface (S8) Umbric Surface (F13) Anomalous Bright Loamy Soils (F20) Muck Presence (A8) Thin Dark Surface (S9) Delta Ochric (F17) Red Parent Material (TF2) 1 cm Muck (A9) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Very Shallow Dark Surface (TF12) Depleted Below Dark Surface (A) Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) Other Thick Dark Surface (A12) X Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) SOIL PARAMETER MET. Restrictive Layer (If Observed) Remarks: Type: Depth (inches):

Sampling Point Number: 37

III STATITOR	Project: Applicant:			WELL 230KV REBUILD ERGY VIRGINIA	Section/T	ownship/Ranca	nge: N/A				
Stantec				GE COUNTIES; CITY OF I	Subregion (LRR or MLRA):						
	State:		VIRC	INIA				7.344021° -77.3	392836°		
Inv	estigator(s):	B. YOUNG, C. NICE					Terminus:	37	7.290017° -77.2	283916°	
	Date:		12/21	/2017		Soil I	Map Unit Name:		EMPORIA SO	DILS	
mary of Findings:				UPLAND	AROVE FL	AG 'BYM-4'.					
	tic Vegetation is Presen	t:			ircumstances:		NWI Classifica	tion:	PSS1E		
	Hydric Soils are Presen			Disturbed Parameters (s			Local Re		CONVEX	· ·	
	nd Hydrology is Presen			Problematic Parameters (s	see Remarks):		Landf		SLOPE	Е	
	rea is within a Wetland	l:	Atyp	ical Climate/Hydrology (s	see Remarks):		Slop	e %:	6-8		
rology Parameter:	P	imary Indicator						Secondary India	cators:		
	- 11	imary marcaro	3.					il Cracks (B6)	curors.		
Surface Water (A1)	_	_ Water Stained	Leaves (B))			Sparsely V	egetated Conca	ve Surface (B	8)	
High Water Table (A2) Aquatic Fauna (B13)						Drainage Patterns (B10)					
Saturation (A3)	_	_Marl Deposits				Moss Trim Lines (B16)					
Water Marks (B1)	_	_Hydrogen Sul						n Water Table (C2)		
Sediment Deposits (B Drift Deposits (B3)		Presence of R	3-4	Living Roots (C3)				urrows (C8) Visible on Aeri	al Imageny (C	(0)	
Algal Mat or Crust (B	4)	_		Tilled Soils (C6)				Stressed Plants		2)	
Iron Deposits (B5)	·/	Thin Muck Su						ic Position (D2)			
Inundation Visible on	Aerial Imagery (B7)	Other	,					quitard (D3)			
								ral Test (D5)			
Water Danish (in alesa).				Remarks: HYDROL	OCV DADA	METER NOT	Sphagnum	Moss (D8)			
Water Depths (inches): Surface Wate	er:			MIDROL	OGI FARA	LEIER NOT	nici.				
Water Tab											
Saturated so	il: >20										
etation Parameter:											
Domin	nt Species	Stratum	IND	1 %	Non-Do	minant Species		Stratum	IND	%	
	a tomentosa	Sapling	UPL	5		ım capillifolium		Herbaceous	FACU	10	
Microstegi	um vimineum	Herbaceous	FAC	45 Pteridium aquilinum Herbaceous FACU						10	
					Kub	us argutus		Herbaceous	FAC	5	
									1 1		
	it species FAC or wetter	: 50%				Pr	evalence Index:	3.4			
% Dominar	a species i AC OI Weller		L WETLAND	PLANT LIST		Calculated	using all species pre	esent.	•		
NOTE: SPECIES INDIC	ATOR STATUS ACCORDING	TO 2016 NATIONA									
NOTE: SPECIES INDIC	ATOR STATUS ACCORDING	TO 2016 NATIONA		Remarks: VEGETA	TION PARA	METER NOT	MET.				
NOTE: SPECIES INDIC Rapid Test for Hydroph Domina	ATOR STATUS ACCORDING /tic Vegetation: nce Test >50%:	: TO 2016 NATIONA 		Remarks: VEGETA	TION PARA	METER NOT	MET.				
NOTE: SPECIES INDIC Rapid Test for Hydroph Domina Prevalence	ATOR STATUS ACCORDING vtic Vegetation: nce Test >50%: E Index is ≤ 3.0:	- TO 2016 NATIONA		Remarks: VEGETA	FION PARA	METER NOT	МЕТ.				
NOTE: SPECIES INDIC Rapid Test for Hydroph Domina	ATOR STATUS ACCORDING vtic Vegetation: nce Test >50%: E Index is ≤ 3.0:	: TO 2016 NATIONA 		Remarks: VEGETA	ΓΙΟΝ PARA	METER NOT	MET.				
NOTE: SPECIES INDIC Rapid Test for Hydroph Domina Prevalence	ATOR STATUS ACCORDING vtic Vegetation: nce Test >50%: E Index is ≤ 3.0:	- TO 2016 NATIONA		Remarks: VEGETA	TION PARA	METER NOT	мет.				
NOTE: SPECIES INDIC Rapid Test for Hydroph Domina Prevalence Problematic Hydroph Parameter:	ATOR STATUS ACCORDING rtic Vegetation: nce Test >50%; ! Index is ≤ 3.0: rtic Vegetation:	Matrix			Redox Fea	tures					
NOTE: SPECIES INDIC Rapid Test for Hydroph Domina Prevalence Problematic Hydroph Parameter: Depth (inches)	ATOR STATUS ACCORDING rtic Vegetation: nee Test >50%: Index is ≤ 3.0: rtic Vegetation: Color (Moi	Matrix	%	Remarks: VEGETA			MET.		Texture		
NOTE: SPECIES INDIC Rapid Test for Hydroph Domina Prevalence Problematic Hydroph Parameter: Depth (inches) 0-16	ATOR STATUS ACCORDING tric Vegetation: nee Test >50%: Index is ≤ 3.0: tric Vegetation: Color (Moi 2.5Y 3/3	Matrix	% 100		Redox Fea	tures			SANDY LO		
NOTE: SPECIES INDIC Rapid Test for Hydroph Domina Prevalence Problematic Hydroph Parameter: Depth (inches)	ATOR STATUS ACCORDING rtic Vegetation: nee Test >50%: Index is ≤ 3.0: rtic Vegetation: Color (Moi	Matrix	%		Redox Fea	tures					
NOTE: SPECIES INDIC Rapid Test for Hydroph Domina Prevalence Problematic Hydroph Parameter: Depth (inches) 0-16	ATOR STATUS ACCORDING tric Vegetation: nee Test >50%: Index is ≤ 3.0: tric Vegetation: Color (Moi 2.5Y 3/3	Matrix	% 100		Redox Fea	tures			SANDY LO		
NOTE: SPECIES INDIC Rapid Test for Hydroph Domina Prevalence Problematic Hydroph Parameter: Depth (inches) 0-16 16-20	ATOR STATUS ACCORDING tric Vegetation: nee Test >50%: Index is ≤ 3.0: tric Vegetation: Color (Moi 2.5Y 3/3	Matrix	% 100		Redox Fea	tures			SANDY LO		
NOTE: SPECIES INDIC Rapid Test for Hydroph Domina Prevalence Problematic Hydroph Parameter: Depth (inches) 0-16 16-20 Hydric Soil Indicators:	ATOR STATUS ACCORDING rtic Vegetation: nee Test >50%: 1 Index is ≤ 3.0: rtic Vegetation: Color (Moi 2.5Y 3/3 2.5Y 5/4	Matrix	%a 100 100	Color (Moist)	Redox Fea	tures	Loc		SANDY LOA	M	
NOTE: SPECIES INDIC Rapid Test for Hydroph Domina Prevalence Problematic Hydroph Parameter: Depth (inches) 0-16 16-20 Hydric Soil Indicators: Histosol (A1)	ATOR STATUS ACCORDING rtic Vegetation: nee Test >50%: I Index is \le 3.0: rtic Vegetation: Color (Moi 2.5Y 3/3 2.5Y 5/4 Coast P	Matrix st)	% 100 100	Color (Moist) Redox Dari	Redox Fea	Type	Loc	ndicators for Pr	SANDY LOA	M	
NOTE: SPECIES INDIC Rapid Test for Hydroph Domina Prevalence Problematic Hydroph Parameter: Depth (inches) 0-16 16-20 Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2)	Coast P Sandy N	Matrix st) rairie Redox (A	% 100 100	Color (Moist) Redox Darl Depleted D	Redox Fea % % k Surface (F6) ark Surface (F	Type	Loc		SANDY LOA	M	
NOTE: SPECIES INDIC Rapid Test for Hydroph Domina Prevalence Problematic Hydroph Parameter: Depth (inches) 0-16 16-20 Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3)	Coast P Sandy N Sandy O Sand	Matrix st) rairie Redox (A	% 100 100	Color (Moist) Redox Darl Depleted D Redox Dep	Redox Fea % % k Surface (F6) ark Surface (F8)	Type	Loc	lcm Muck	SANDY LOA CLAY LOA oblematic Hy (A9)	M	
NOTE: SPECIES INDIC Rapid Test for Hydroph Domina Prevalence Problematic Hydroph Parameter: Depth (inches) 0-16 16-20 Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4	ATOR STATUS ACCORDING ric Vegetation: nee Test >50%: l'Index is \le 3.0: ric Vegetation: Color (Moi 2.5Y 3/3 2.5Y 5/4 Coast P Sandy N Sandy N Sandy G Sandy F	Matrix st) rairie Redox (A fucky Mineral (Gleyed Matrix (S Redox (S5)	% 100 100	Color (Moist) Redox Dari Depleted D Redox Dep Marl (F10)	Redox Fea % % k Surface (F6) ark Surface (F8)	Type	Loc	1cm Muck 2cm Muck	SANDY LOA CLAY LOA oblematic Hy (A9) (A10)	M	
NOTE: SPECIES INDIC Rapid Test for Hydroph Domina Prevalence Problematic Hydroph Parameter: Depth (inches) 0-16 16-20 Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3)	Coast P Sandy P Stripped	Matrix st) rairie Redox (A	% 100 100	Color (Moist) Redox Darl Depleted D Redox Dep Marl (F10) Depleted O	Redox Fea % % k Surface (F6) ark Surface (F8)	Type Type	Loc	1cm Muck 2cm Muck Reduced V	SANDY LOA CLAY LOA oblematic Hy (A9)	dric Soils	
NOTE: SPECIES INDIC Rapid Test for Hydroph Domina Prevalence Problematic Hydroph Parameter: Depth (inches) 0-16 16-20 Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4 Stratified Layers (A5)	Coast P Sandy P Sandy P Strippe Dark St	Matrix st) rairie Redox (A ducky Mineral (3fleyed Matrix (Stedox (S5) d Matrix (S6)	% 100 100 100 SS1)	Color (Moist) Redox Darl Depleted D Redox Dep Marl (F10) Depleted O	Redox Fea % % k Surface (F6) ark Surface (F8) chric (F11) anese Masses	Type Type	Loc	1cm Muck 2cm Muck Reduced V	SANDY LOA CLAY LOA oblematic Hys (A9) (A10) 'ertic (F18)	dric Soils	
NOTE: SPECIES INDIC Rapid Test for Hydroph Domina Prevalence Problematic Hydroph Parameter: Depth (inches) 0-16 16-20 Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4 Stratified Layers (A5) Organic Bodies (A6) Sem Mucky Mineral (Muck Presence (A8)	Color (Moi 2.5Y 3/3 2.5Y 5/4	Matrix st) rairie Redox (A ducky Mineral (Gleyed Matrix (S6 tedox (S5) d Matrix (S6) urface (S7) urface (S7)	% 100 100 100 (6) SSI) (4)	Redox Darl Depleted D Redox Dep Marl (F10) Depleted O Iron-Manga Umbric Sur	Redox Fea % % % % % % % % % % % % % % % % % % %	Type Type	Loc	1cm Muck 2cm Muck Reduced V Piedmont I Anomalou Red Parent	SANDY LOA CLAY LOA (A9) (A10) 'ertic (F18) Floodplain So s Bright Loan t Material (TF	dric Soils ils (F19) ny Soils (F:2)	
NOTE: SPECIES INDIC Rapid Test for Hydroph Domina Prevalence Problematic Hydroph Parameter: Depth (inches) 0-16 16-20 Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4 Stratified Layers (A5) Organic Bodies (A6) 5cm Mucky Mineral ()	Coast P	rairie Redox (A Mucky Mineral (Gleyed Matrix (S kedox (S5) d Matrix (S6) urface (S7) ue Below Surface	% 100 100 100 (6) S1) (4)	Redox Dari Depleted D Redox Dep Marl (F10) Depleted O Iron-Manga Umbric Sur Detta Ochri Reduced Vo	Redox Fea % % % % % % % % % % % % % % % % % % %	Type Type T7)	Loc	1cm Muck 2cm Muck Reduced V Piedmont I Anomalou Red Parent	SANDY LOA CLAY LOA (A9) (A10) 'ertic (F18) Floodplain So s Bright Loan	dric Soils ils (F19) ny Soils (F:2)	

Remarks: SOIL PARAMETER NOT MET.

Restrictive Layer (If Observed)
Type:
Depth (inches):

Sampling Point Number: 38

•	Project: CHESTE	RFIELD - HOPE	WELL 230KV REBUILD					
			ERGY VIRGINIA		Section/Township/Range:		N/A	
City	y/County: CHESTERFIELD AND	PRINCE GEOR VIRC		OPEWELL	Subregion (L.	RR or MLRA): Start:	LRR P 37.344021° -77.392836°	
Inves	State:tigator(s):				Terminus:		37.290017° -77.283916°	
lives	Date:	12/21					LYNCHBURG - SLAGLE COMPLEX	
Summary of Findings:			WETLANI	D BELOW FI				
	c Vegetation is Present: X		Normal Cir	rcumstances:	X 1	NWI Classification:	PEM1R	
	lydric Soils are Present: X	1	Disturbed Parameters (se	ee Remarks):		Local Relief:	CONCAVE	
Wetlan	d Hydrology is Present: X		Problematic Parameters (se	ee Remarks):		FLAT		
	ea is within a Wetland: X	Atyp	ical Climate/Hydrology (se	ee Remarks):		Slope %:	0-1	
Hydrology Parameter:								
	Primary Indic	ators:					dary Indicators:	
Surface Water (A1) High Water Table (A2) X Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on A	Presence of Recent Iro Thin Mucl	C1) 1 Living Roots (C3)		Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) X Geomorphic Position (D2) Shallow Aquiiard (D3) X FAC-Neutral Test (D5)				
Water Depths (inches):			Remarks: HYDROLO	OCV PARAM	IETER MET.	Sphagnum Moss	(D8)	
Surface Water:			Remarks. ITT DRODE	JOT TAKAN	ETEK MET			
Water Table:								
Saturated soil:	2							
Vegetation Parameter:								
Dominan	t Species Stratu	n IND	%	Non-Don	ninant Species	St	ratum IND %	
Panicum dich			60	11011 25 011	пини органо		110	
	species FAC or wetter: 100%	ONAL WETLAND	PLANT LIST			evalence Index:	2.0	
Rapid Test for Hydrophyt	ic Vegetation: X		Remarks: VEGETAT	ION PARAM	IETER MET.			
	ce Test >50%: X							
	index is ≤ 3.0 : X							
Problematic Hydrophyt	ic Vegetation:							
Soil Parameter:								
Son Tarameter.	Matrix			Redox Feat	ures	8.77		
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Туре	Loc	Texture	
0-4	10YR 4/2	100					SANDY CLAY LOAM	
4-16	10YR 5/1	75	5YR 4/6	20	С	M	SANDY CLAY LOAM	
			5YR 4/6	5	С	PL		
16-20	5Y 5/1	80	5YR 4/6	15	С	M	SANDY CLAY	
II. Jai - Cail I - Ji			5YR 4/6	5	С	PL		
Hydric Soil Indicators: Histosol (A1)	Coast Prairie Redox	(A16)	Radov Dark	Surface (F6)		Indicat	ors for Problematic Hydric Soils	
Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) 5cm Mucky Mineral (A' Muck Presence (A8) 1 cm Muck (A9) Depleted Below Dark Strick Dark Surface (A1)	Depleted Da Redox Depr Marl (F10) Depleted Oc Iron-Mangar Umbric Surf Delta Ochrit Reduced Ve Piedmont FI Anomalous	cm Muck (A9) cm Muck (A10) keduced Vertic (F18) Piedmont Floodplain Soils (F19) Anomalous Bright Loamy Soils (F20) ked Parent Material (TF2) /ery Shallow Dark Surface (TF12)						
Danisin I acor	ramad)		Pamarke: COH DAD	AMETERA	FT			
Restrictive Layer (If Ob: Type:			Remarks: SOIL PARA	AMETER MI	ы.			
Depth (inches):								

Page 86 of 110 Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region Sampling Point Number: 39 Project: CHESTERFIELD - HOPEWELL 230KV REBUILD Applicant: DOMINION ENERGY VIRGINIA Section/Township/Range: City/County: CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL Subregion (LRR or MLRA): LRR P State: VIRGINIA Start: 37.344021° -77.392836° Investigator(s): B. CONNERS, A. MCINTYRE Terminus: 37.290017° -77.283916° Soil Map Unit Name: Date: 12/21/2017 LYNCHBURG - SLAGLE COMPLEX UPLAND ABOVE FLAG 'BCS-6'. Normal Circumstances: X Hydrophytic Vegetation is Present NWI Classification PEM1R Hydric Soils are Present: Disturbed Parameters (see Remarks): Local Relief: CONVEX Wetland Hydrology is Present: Problematic Parameters (see Remarks): Landform: SLOPE Sampled Area is within a Wetland: Atypical Climate/Hydrology (see Remarks): Slope %: Primary Indicators: Secondary Indicators: Surface Soil Cracks (B6) Surface Water (A1) Sparsely Vegetated Concave Surface (B8) Water Stained Leaves (B9) High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10) Marl Deposits (B15) Moss Trim Lines (B16) Water Marks (B1) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Crayfish Burrows (C8) Drift Deposits (B3) Saturation Visible on Aerial Imagery (C9) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) Iron Deposits (B5) Thin Muck Surface (C7) Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) Other Shallow Aquitard (D3) FAC-Neutral Test (D5) Sphagnum Moss (D8) Water Depths (inches): HYDROLOGY PARAMETER NOT MET. Surface Water: Water Table: Saturated soil: Vegetation Parameter: IND Non-Dominant Species **Dominant Species** Stratum Stratum Juniperus virginiana FACU 20 Schedonorus arundinaceus 10 Herbaceous FAC Herbaceous Andropogon virginicus FAC 30 Juniperus virginiana Herbaceous FACU 10 Solidago altissima Herbaceous Panicum dichotomiflorum FACW FACU Herbaceous 10 Eupatorium capillifolium Allium vineale Setaria pumila Herbaceous Herbaceous Herbaceous FACU 15 **FACU** FAC % Dominant species FAC or wetter: Prevalence Index: NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST Calculated using all species present. Rapid Test for Hydrophytic Vegetation: VEGETATION PARAMETER NOT MET. Remarks: Dominance Test >50%: Prevalence Index is ≤ 3.0 : Problematic Hydrophytic Vegetation:

Stantec

Summary of Findings:

Hydrology Parameter:

Soil Parameter:

Saturation (A3)

	Matrix				Redox Fea	tures		
Depth (inches)	Color (Moist)	%	Color	r (Moist)	%	Type	Loc	Texture
0-3	10YR 4/3	100						GRAVELLY SANDY LOAM
3-8	2.5Y 6/4	100						GRAVELLY SAND
ydric Soil Indicators:								
Histosol (A1)	Coast Prairie Redo	x (A16)		Redox Dark	Surface (F6))	1	Indicators for Problematic Hydric Soils
Histic Epipedon (A2)	Sandy Mucky Min	eral (S1)		Depleted Da	rk Surface (I	77)		
Black Histic (A3)	Sandy Gleyed Mat	rix (S4)		Redox Depre	essions (F8)			1cm Muck (A9)
Hydrogen Sulfide (A4)	Sandy Redox (S5)			Marl (F10)				2cm Muck (A10)
Stratified Layers (A5)	Stripped Matrix (Se	6)		Depleted Oc	hric (F11)			Reduced Vertic (F18)
Organic Bodies (A6)	Dark Surface (S7)			Iron-Mangar	iese Masses	(F12)	1	Piedmont Floodplain Soils (F19)
5cm Mucky Mineral (A7)	Polyvalue Below S	surface (S8)		Umbric Surf	ace (F13)			Anomalous Bright Loamy Soils (F2
Muck Presence (A8)	Thin Dark Surface	(S9)		Delta Ochric	(F17)			Red Parent Material (TF2)
1 cm Muck (A9)	Loamy Mucky Mir	neral (F1)		Reduced Ve	rtic (F18)			Very Shallow Dark Surface (TF12)
Depleted Below Dark Surface (A)	Loamy Gleyed Ma	trix (F2)	_	Piedmont Flo	oodplain Soi	ls (F19)		Other
Thick Dark Surface (A12)	Depleted Matrix (F	F3)	_	Anomalous l	Bright Loam	y Soils (F20)		
Restrictive Layer (If Observed)			Remarks:	SOIL PARA	AMETER N	OT MET.		
Type:	GRAVEL							
Depth (inches):	BELOW 8".	_	1					

	Project:	CHESTE	RFIELD - HOPE	EWELL 230KV I	REBUILD							
	Applicant:	I	DOMINION EN	ERGY VIRGINIA	A		-	ownship/Range:		N/A		
Cit	ty/County: _ State:	CHESTERFIELD AND		GE COUNTIES:	; CITY OF H	OPEWELL	Subregion (I	LRR or MLRA):		LRR I		
Inves			B. CONNERS,				-	Start: Terminus:		7.344021° -77 7.290017° -77		
	Date:						Soil N	Map Unit Name:				PLEX
Summary of Findings:					LIDI AND	A POVE EI	AG 'BCS-24'.					
	ic Vegetatio	on is Present: X			Normal Cir			NWI Classifica	tion:	N/A		
		are Present:		Disturbed Pa	rameters (se	e Remarks):		Local Re		NON		
		y is Present:		Problematic Pa				Landf		FLAT		
Sampled Ar- Hydrology Parameter:	ea is within	a wettand:	Atyp	oical Climate/H	ydrology (se	e Kemarks):		Slop	e %:	0-1		
any arrowegy a management		Primary Indica	ators:						Secondary India	cators:		
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4 Iron Deposits (B5) Inundation Visible on A)	Aquatic Fa Marl Depc Hydrogen Oxidized F Presence o Recent Iro	ined Leaves (BS auna (B13) osits (B15) Sulfide Odor (G Rhizospheres or of Reduced Iron n Reduction in & Surface (C7)	C1) n Living Roots (C4)				Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) X Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Sphagnum Moss (D8) OT MET.				
Water Depths (inches): Surface Water Water Table Saturated soil	:			Remarks:	HYDROLO	OGY PARA	METER NOT					
Vegetation Parameter:												
Dominar	t Species	Stratur	m IND	%		Non-Do	minant Species	pecies Stratum IND %				
Liquidamba	r styraciflud	7 Shrub	FAC	5		Eupator	ium perfoliatum	erfoliatum Herbaceous FACW 15				
Microstegiu Schedonorus Allium Lonicera	arundinace, vineale japonica	us Herbacec Herbacec Vine	ous FAC ous FACU	25 20 20 10		Alli	um vineale		Herbaceous	FACU	15	
% Dominant								evalence Index:	3.3			
Rapid Test for Hydrophyt		ACCORDING TO 2016 NATIO	ONAL WETLAND		VEGETATI	ION PARA	METER MET.	using all species pre	sent.			
	ce Test >50			Temans.	, LOLINI		TELEK MET					
Prevalence												
Problematic Hydrophyt	ne vegetatio	m										
Soil Parameter:						Redox Fea				Name of the	s depress	
Depth (inches)		Matrix Color (Moist)	%	Color (Moist)	%	Type	Loc		Textur	e	(COM ASSESSED
0-10		10YR 4/4	100							LOAN		
10-20		10YR 5/4	100							SAND		
Hydric Soil Indicators: Histosol (A1)		Coast Prairie Redox	(A16)	т	Redox Dark	Surface (F6		, n	idicators for Pr	ohlamatia II	vdvic Cot	le .
Histic Epipedon (A2)	_	Sandy Mucky Miner			Depleted Da				201013 JUI 11	- comune II	, aric boll	
Black Histic (A3)	_	Sandy Gleyed Matri	x (S4)		Redox Depre	essions (F8)			lcm Muck			
Hydrogen Sulfide (A4) Stratified Layers (A5)	_	Sandy Redox (S5) Stripped Matrix (S6)			Marl (F10) Depleted Oc	hric (F11)			2cm Muck Reduced V			
Organic Bodies (A6)	_	Dark Surface (S7)	4		ron-Mangan		(F12)			Floodplain S	oils (F19)
5cm Mucky Mineral (A	7) _	Polyvalue Below Su			Umbric Surfa					s Bright Loa		(F20)
Muck Presence (A8) 1 cm Muck (A9)	_	Thin Dark Surface (S Loamy Mucky Mine			Delta Ochric Reduced Ver					: Material (T ow Dark Su		12)
Depleted Below Dark S	urface (A)	Loamy Gleyed Matri			Piedmont Flo		ls (F19)		Other	ow Dark Stl	nace (1F	12)
Thick Dark Surface (A1	_	Depleted Matrix (F3					y Soils (F20)					
Restrictive Layer (If Ob.	served)			Remarks: 5	SOIL PARA	METER N	ОТ МЕТ.					
Type: Depth (inches):												

61 -	Project: CHESTERFIELD - HOPEWELL 230KV REBUILD Applicant: DOMINION ENERGY VIRGINIA Section/Township/Range: N/A									
				RGY VIRGINIA GE COUNTIES; CITY (OE HODEWELL		ownship/Range: _ .RR or MLRA):		N/A LRR P	
	ate:	ELD AND PRING	VIRG		OF HOPEWELL	Subregion (L	Start:		.344021° -77.3	92836°
Investigator		B. CC		A. MCINTYRE			Terminus:		.290017° -77.2	
D	ate:		12/21/	2017		Soil M	/ap Unit Name:	LYNCHB	URG - SLAGI	E COMPLE
imary of Findings:					AND BELOW FL					
Hydrophytic Veg	etation is Present: _ Soils are Present:	X		Norma Disturbed Parameter	al Circumstances:	X	NWI Classificati Local Rel		N/A CONCAV	F
and a filtering	rology is Present:	X	1	Problematic Parameter		_	Landfo		FLAT	
Sampled Area is w	_	X		cal Climate/Hydrolog	_	_	Slope		0-1	
rology Parameter:										
	Prim	ary Indicators:				Secondary Indicators: oil Cracks (B6)				
Surface Water (A1)	V	Vater Stained L	eaves (B9)				getated Concav	ve Surface (B	8)
High Water Table (A2)		quatic Fauna (I	313)				Drainage Pa	tterns (B10)		
X Saturation (A3)		Marl Deposits (H					Moss Trim			
Water Marks (B1) Sediment Deposits (B2)		lydrogen Sulfid		Living Roots (C3)	1			Water Table (CS)	C2)	
Drift Deposits (B3)		resence of Red		The state of the s			Crayfish Bu	riows (C8) isible on Aeria	al Imagery (C	9)
Algal Mat or Crust (B4)	Mat or Crust (B4) Recent Iron R			Filled Soils (C6)				tressed Plants		-)
Iron Deposits (B5)							X Geomorphic	Position (D2)		
Inundation Visible on Aerial I							Shallow Aq			
							X FAC-Neutra Sphagnum N			
ater Depths (inches):				Remarks: HYDR	OLOGY PARAM	ETER MET.	Spilagilum r	vioss (D8)		
Surface Water:										
Water Table:										
ation Parameter:	,									
Dawin and Cons	T	Stt	IND		N D	!t C!		C44	IND	0/
Dominant Spec		Stratum Shrub	IND FAC	10		ninant Species on capillifolium		Stratum Herbaceous	FACU FACU	10
Microstegium vimi		Herbaceous	FAC	30		m vineale		Herbaceous	FACU	5
Carex lurida Juncus effusu.		Herbaceous Herbaceous	OBL OBL	20 20		s argutus ia pumila		Herbaceous Herbaceous	FAC FAC	5
		1		1 1 1						
								- 1		
% Dominant specie	s FAC or wetter:	100%				Pre	evalence Index:	2.4		
NOTE: SPECIES INDICATOR ST		2016 NATIONAL V	VETLAND	,			using all species pres	ent.		
Rapid Test for Hydrophytic Veg Dominance Test				Remarks: VEGE	TATION PARAM	IETER MET.				
Prevalence Index i										
Problematic Hydrophytic Veg				U	NIDENTIFIED N	ON-DOMINAN	NT SPECIES OF	THISTLE (5%) PRESENT.	
arameter:										
Martin San San San San San San San San San Sa		trix			Redox Feat					
Depth (inches)	Color (Moist)		%	Color (Moist)	Redox Feat	Type	Loc		Texture	ye (4)
Martin San Francisco			% 100 75	Color (Moist) 5YR 5/8			Loc		Texture CLAY LOA CLAY LOA	
Depth (inches) 0-3	Color (Moist) 10YR 4/2		100		%	Туре			CLAY LOA	
Depth (inches) 0-3	Color (Moist) 10YR 4/2		100	5YR 5/8	20	С	M		CLAY LOA	
Depth (inches) 0-3 3-20	Color (Moist) 10YR 4/2		100	5YR 5/8	20	С	M		CLAY LOA	
Depth (inches) 0-3 3-20 dric Soil Indicators: Histosol (A1)	Color (Moist) 10YR 4/2 2.5Y 5/1 Coast Prain	ie Redox (A16)	100 75	5YR 5/8 5YR 5/8	20 5 Dark Surface (F6)	Type C C	M PL	dicators for Pre	CLAY LOA	M
Depth (inches) 0-3 3-20 ydrie Soil Indicators: Histosol (A1) Histic Epipedon (A2)	Color (Moist) 10YR 4/2 2.5Y 5/1 Coast Prair Sandy Muc	ie Redox (A16) sky Mineral (S1	100 75	5YR 5/8 5YR 5/8 Redox I	20 5 Dark Surface (F6) d Dark Surface (F7	Type C C	M PL		CLAY LOA CLAY LOA	M
Depth (inches) 0-3 3-20 ydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3)	Color (Moist) 10YR 4/2 2.5Y 5/1 Coast Prair Sandy Muc Sandy Gley	ie Redox (A16) ky Mineral (S1 ved Matrix (S4)	100 75	5YR 5/8 5YR 5/8 Redox I Deplete Redox I	20 5 Dark Surface (F6) d Dark Surface (F7) Depressions (F8)	Type C C	M PL	lcm Muck	CLAY LOA CLAY LOA oblematic Hye	M
Depth (inches) 0-3 3-20 /dric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4)	Color (Moist) 10YR 4/2 2.5Y 5/1 Coast Prair Sandy Muc Sandy Gle Sandy Red	ie Redox (A16) ky Mineral (S1 ved Matrix (S4) ox (S5)	100 75	SYR 5/8 SYR 5/8 Redox I Deplete Redox I Marl (F	20 5 Dark Surface (F6) d Dark Surface (F7) Depressions (F8)	Type C C	M PL	1cm Muck 2cm Muck	CLAY LOA CLAY LOA coblematic Hye (A9) (A10)	M
Depth (inches) 0-3 3-20 ydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3)	Color (Moist) 10YR 4/2 2.5Y 5/1 Coast Prair Sandy Muc Sandy Gley	ie Redox (A16) kky Mineral (S1) ved Matrix (S4) ox (S5) atrix (S6)	100 75	5YR 5/8 5YR 5/8 Redox I Marl (F Deplete	20 5 Dark Surface (F6) d Dark Surface (F7) Depressions (F8)	Type C C 7)	M PL	1cm Muck 2cm Muck Reduced V	CLAY LOA CLAY LOA coblematic Hye (A9) (A10)	M dric Soils
Depth (inches) 0-3 3-20 ydrie Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5)	Color (Moist) 10YR 4/2 2.5Y 5/1 Coast Prair Sandy Mue Sandy Gue Sandy Red Stripped M Dark Surfa	ie Redox (A16) kky Mineral (S1) ved Matrix (S4) ox (S5) atrix (S6)	100 75	SYR 5/8 SYR 5/8 Redox I Deplete Redox I Marl (F Deplete Iron-Ma	20 5 Dark Surface (F6) d Dark Surface (F7) Depressions (F8) 10) d Ochric (F11)	Type C C 7)	M PL	1cm Muck 2cm Muck Reduced V Piedmont F	CLAY LOA CLAY LOA coblematic Hye (A9) (A10) ertic (F18)	M dric Soils
Depth (inches) 0-3 3-20 ydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6)	Color (Moist) 10YR 4/2 2.5Y 5/1 Coast Prair Sandy Muc Sandy Gle Sandy Red Stripped M Dark Surfa Polyvalue Thin Dark	ie Redox (A16) kly Mineral (S1 ved Matrix (S4) ox (S5) atrix (S6) ce (S7) Below Surface (S9)	100 75	SYR 5/8 SYR 5/8 Redox I Deplete Redox I Marl (F Deplete Iron-Ma Umbric Delta O	20 5 Dark Surface (F6) d Dark Surface (F7) Depressions (F8) 10) d Ochric (F11) maganese Masses (I Surface (F13) chric (F17)	Type C C 7)	M PL	1cm Muck 2cm Muck Reduced V Piedmont F Anomalous	CLAY LOA CLAY LOA coblematic Hye (A9) (A10) fertic (F18) Cloodplain Soi	M dric Soils ils (F19) y Soils (F2
Depth (inches) 0-3 3-20 ydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) 5cm Mucky Mineral (A7) Muck Presence (A8) 1 cm Muck (A9)	Color (Moist) 10YR 4/2 2.5Y 5/1 Coast Prain Sandy Muc Sandy Gle Sandy Red Stripped M Dark Surfa Polyvalue Thin Dark Loamy Mu	ie Redox (A16) ky Mineral (S1 red Matrix (S4) ox (S5) atrix (S6) ce (S7) Below Surface (Surface (S9) cky Mineral (F	100 75)	SYR 5/8 SYR 5/8 Redox I Deplete Redox I Marl (F Deplete Iron-Me Umbric Delta O Reducer	20 5 Dark Surface (F6) d Dark Surface (F7) Depressions (F8) 10) d Ochric (F11) unganese Masses (I Surface (F13) chric (F17) d Vertic (F18)	Type C C 7)	M PL	1cm Muck 2cm Muck Reduced V Piedmont F Anomalous Red Parent Very Shallo	CLAY LOA CLA	M dric Soils
Depth (inches) 0-3 3-20 dric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) 5cm Mucky Mineral (A7) Muck Presence (A8) 1 cm Muck (A9) Depleted Below Dark Surface	Color (Moist) 10YR 4/2 2.5Y 5/1 Coast Prair Sandy Muc Sandy Gle Sandy Red Stripped M Dark Surfa Polyvalura Thin Dark Loamy Mu (A) Loamy Gle	ie Redox (A16) kly Mineral (S1) ved Matrix (S4) ox (S5) atrix (S6) ce (S7) Below Surface (S9) cky Mineral (F2) yed Matrix (F2)	100 75)	SYR 5/8 SYR 5/8 Redox I Deplete Redox I Marl (F Deplete Iron-Me Umbric Delta O Reducee Piedmon	20 5 Dark Surface (F6) d Dark Surface (F7) Depressions (F8) 10) d Ochric (F11) unganese Masses (I Surface (F17) d Vertic (F18) nt Floodplain Soils	Type C C 7)	M PL	1cm Muck 2cm Muck Reduced V Piedmont F Anomalous Red Parent	CLAY LOA CLA	M dric Soils
Depth (inches) 0-3 3-20 dric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) Scm Mucky Mineral (A7) Muck Presence (A8) 1 cm Muck (A9)	Color (Moist) 10YR 4/2 2.5Y 5/1 Coast Prain Sandy Muc Sandy Gle Sandy Red Stripped M Dark Surfa Polyvalue Thin Dark Loamy Mu	ie Redox (A16) kly Mineral (S1) ved Matrix (S4) ox (S5) atrix (S6) ce (S7) Below Surface (S9) cky Mineral (F2) yed Matrix (F2)	100 75)	SYR 5/8 SYR 5/8 Redox I Deplete Redox I Marl (F Deplete Iron-Me Umbric Delta O Reducee Piedmon	20 5 Dark Surface (F6) d Dark Surface (F7) Depressions (F8) 10) d Ochric (F11) unganese Masses (I Surface (F13) chric (F17) d Vertic (F18)	Type C C 7)	M PL	1cm Muck 2cm Muck Reduced V Piedmont F Anomalous Red Parent Very Shallo	CLAY LOA CLA	M dric Soils
Depth (inches) 0-3 3-20 /dric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) 5cm Mucky Mineral (A7) Muck Presence (A8) I cm Muck (A9) Depleted Below Dark Surface Thick Dark Surface (A12) Restrictive Layer (If Observed)	Color (Moist) 10YR 4/2 2.5Y 5/1 Coast Prair Sandy Mue Sandy Red Stripped M Dark Surfa Polyvalue Thin Dark Loamy Mu (Al Loamy Gle	ie Redox (A16) kly Mineral (S1) ved Matrix (S4) ox (S5) atrix (S6) ce (S7) Below Surface (S9) cky Mineral (F2) yed Matrix (F2)	100 75)	SYR 5/8 SYR 5/8 SYR 5/8 Redox I Deplete Redox I Marl (F Deplete Iron-Ma Umbric Delta O Reducee Piedmon Anomal	20 5 Dark Surface (F6) d Dark Surface (F7) Depressions (F8) 10) d Ochric (F11) unganese Masses (I Surface (F17) d Vertic (F18) nt Floodplain Soils	Type C C 7) 712) 6 (F19) Soils (F20)	M PL	1cm Muck 2cm Muck Reduced V Piedmont F Anomalous Red Parent Very Shallo	CLAY LOA CLA	M dric Soils ils (F19) y Soils (F20 2)
ydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) Sem Mucky Mineral (A7) Muck Presence (A8) 1 cm Muck (A9) Depleted Below Dark Surface Thick Dark Surface (A12)	Color (Moist) 10YR 4/2 2.5Y 5/1 Coast Prair Sandy Mue Sandy Red Stripped M Dark Surfa Polyvalue Thin Dark Loamy Mu (Al Loamy Gle	ie Redox (A16) kly Mineral (S1) ved Matrix (S4) ox (S5) atrix (S6) ce (S7) Below Surface (S9) cky Mineral (F2) yed Matrix (F2)	100 75)	SYR 5/8 SYR 5/8 SYR 5/8 Redox I Deplete Redox I Marl (F Deplete Iron-Ma Umbric Delta O Reducee Piedmon Anomal	20 5 Dark Surface (F6) d Dark Surface (F7) Depressions (F8) 10) d Ochric (F11) unganese Masses (I Surface (F13) chric (F17) d Vertic (F18) nt Floodplain Soils ous Bright Loamy	Type C C 7) 712) 6 (F19) Soils (F20)	M PL	1cm Muck 2cm Muck Reduced V Piedmont F Anomalous Red Parent Very Shallo	CLAY LOA CLA	M dric Soils

City	Applicant: chesterfield / chesterfield / state:	DOMINION ENI AND PRINCE GEOR VIRO	GINIA		Section/Township/Range: N/A Subregion (LRR or MLRA): LRR P Start: 37.344021°-77.39				
Invest	Stigator(s):	B. YC	OUNG 1/2017		Terminus: Soil Map Unit Name:				
mmary of Findings:			UPLAN	D ABOVE FLAG I	ВҮО-9.				
Hydrophyti H Wetland	Hydrology is Present:		Normal C Disturbed Parameters (s Problematic Parameters (s	See Remarks):	NWI Classifica Local Re Landfi	elief: CONVEX form: SLOPE			
	ea is within a Wetland:		pical Climate/Hydrology (s		Slop	ne %: 1-3			
drology Parameter.	Primary Is	ndicators:				Secondary Indicators:			
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on A		nce of Reduced Iron at Iron Reduction in Muck Surface (C7)	(C1) on Living Roots (C3) n (C4) n Tilled Soils (C6)		Sparsely V Drainage F Moss Trim Dry-Season Crayfish B Saturation Stunted or Geomorph Shallow AL FAC-Neutr	oil Cracks (B6) //egetated Concave Surface (B8) Patterns (B10) In Lines (B16) In Water Table (C2) Burrows (C8) Visible on Aerial Imagery (C9) Stressed Plants (D1) itic Position (D2) quitard (D3) ral Test (D5)			
Water Depths (inches): Surface Water:			Remarks: HYDROL	LOGY PARAMETE		Moss (D8)			
Water Table: Saturated soil:	====		rii						
etation Parameter:	>20								
Dominan	at Species Str	ratum IND	%	Non-Dominan	nt Species	Stratum IND %			
Pinus Juniperus Dichantheliu Lonicera j	virginiana SI m scoparium Herb japonica V	thrub FAC hrub FACU FACW Vine FACU	50	Rubus arg Juncus eff Solidago alt	Jusus	Herbaceous FAC 10 Herbaceous OBL 15 Herbaceous FACU 15			
	species FAC or wetter: 5 TOR STATUS ACCORDING TO 2016	50%	A CALL AND A ROTE		Prevalence Index: Calculated using all species pre				
Rapid Test for Hydrophyti Dominanc	ic Vegetation: ce Test >50%: Index is ≤ 3.0: X	MINOSE		TION PARAMETE		sent.			
100 May 100 Ma	Matrix	I 0/	C: AL:	Redox Features		CERTIFICATION OF THE PERSON OF			
Depth (inches) 0-8	Color (Moist) 2.5Y 5/4	90	Color (Moist) 10YR 5/6	% T	Type Loc C M	Texture CLAY LOAM			
8-20	2.5Y 5/4	90	10YR 6/8	10	C M	CLAY			
ydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) 5cm Mucky Mineral (A7 Muck Presence (A8) 1 cm Muck (A9) Depleted Below Dark Su Thick Dark Surface (A12	Thin Dark Surfa Loamy Mucky Murface (A) Loamy Gleyed M	Mineral (S1) Matrix (S4) S5) S6 (S6) S7) w Surface (S8) ace (S9) Mineral (F1) Matrix (F2)	Depleted D Redox Dep Marl (F10) Depleted O Iron-Mange Umbric Sui Delta Ochr Reduced V Piedmont F	Ochric (F11) anese Masses (F12) arface (F13) ric (F17)	9)	Icm Muck (A9) 2cm Muck (A10) Reduced Vertic (F18) Piedmont Floodplain Soils (F19) Anomalous Bright Loamy Soils (F20 Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other			
Restrictive Layer (If Obs Type:	served)	_		RAMETER NOT M					

Stantec A	Project:		CHESTERFIELD - HOPEWELL 230KV REBUILD DOMINION ENERGY VIRGINIA Section/Township/Range: N/A						
	/County: CHESTERFI				OF HOPEWELL	Subregion (LRR			LRR P
							Start:		021° -77.392836°
Invest							Terminus:	37.290	017° -77.283916°
	Date:		12/21/	/2017		Soil Map	Unit Name:	SLAGL	E SANDY LOAM
mary of Findings:				WETL	AND BELOW F	LAG BYO-9.			
	Vegetation is Present:	X			l Circumstances:		I Classification		N/A
	ydric Soils are Present:	X		Disturbed Parameter			Local Relie		ONCAVE
	Hydrology is Present: _ a is within a Wetland:	X		Problematic Parameter ical Climate/Hydrolog		_	Landforn Slope %		INAGEWAY 0-2
ology Parameter:	a is within a wetland:	Α	Atyp	icai Ciimate/Hydrolog	y (see Remarks):		Stope 7	0.	0-2
ology I arameter.	Prin	ary Indica	tors:				·s:		
Surface Water (A1)			ed Leaves (B9	n		_	Surface Soil C	Cracks (B6) etated Concave St	
High Water Table (A2)		Aquatic Fau		,		_	Drainage Patt		urrace (Do)
Saturation (A3)		Marl Depos				_	Moss Trim Li		
Water Marks (B1)			ulfide Odor (C	21)	1		-	Vater Table (C2)	
Sediment Deposits (B2)				Living Roots (C3)		_	Crayfish Burr		
Drift Deposits (B3)		Presence of	Reduced Iron	(C4)			Saturation Vis	sible on Aerial Im	nagery (C9)
Algal Mat or Crust (B4)	1	Recent Iron	Reduction in	Tilled Soils (C6)			Stunted or Str	essed Plants (D1))
Iron Deposits (B5)		Thin Muck	Surface (C7)			_	Geomorphic I		
Inundation Visible on A	erial Imagery (B7)(Other				-	Shallow Aqui		
						_X	FAC-Neutral		
ater Depths (inches):				Remarks: HYDRO	OLOGY PARAM	IETED MET	Sphagnum Mo	oss (D8)	· · · · · · · · · · · · · · · · · · ·
Surface Water:				Remarks: HYDRO	OLOGY PARAN	TELEK MEI.			
Water Table:									
Saturated soil:	0								
ation Parameter:								1	
		0.							
Juncus e		Stratum		35		ninant Species um giganteum	- 1		IND % ACW 10
Dichanthelium		Herbaceou		30		gon virginicus			FAC 5
140110110010000000000000000000000000000					Solida	go altissima			ACU 5
						ım scabriusculum			OBL 5
	- "					richum pilosum			FAC 3
					Rubi	is argutus	1	Herbaceous I	FAC 3
				1 1 1					
0/ D:	FAC	100%				P	1.1.	1.0	
	species FAC or wetter: OR STATUS ACCORDING TO		NAL WETLAND	PLANT LIST			ence Index: all species presen	1.8	
Rapid Test for Hydrophytic	c Vegetation: X			Remarks: VEGET	TATION PARAM				
	e Test >50%: X								
Prevalence In	ndex is ≤ 3.0: X								
Problematic Hydrophytic									
arameter:	Ma	atrix			Redox Feat	ures			
Depth (inches)	Color (Moist)		%	Color (Moist)	%	Type	Loc		Texture
0-6	2.5Y 5/1		85	10YR 4/6	15	С	M	CL	AY LOAM
6-20	2.5Y 6/2		60	10YR 5/6	40	С	M		AY LOAM
11 6 17 1				L					
dric Soil Indicators:	G . P .		110	D. I. F.	100000			e p 11	
Histosol (A1)		rie Redox (Dark Surface (F6)	7)	India	cators for Problem	natic Hydric Soils
Histic Epipedon (A2) Black Histic (A3)		cky Minera			d Dark Surface (F	/)		1	
	Sandy Rec	yed Matrix	(54)		Depressions (F8)		_	1cm Muck (A9) 2cm Muck (A1)	
Hydrogen Sulfide (A4)	Stripped N			Marl (F)	d Ochric (F11)		_	Reduced Vertic	
Stratified Layers (A5)						E12)	_	The second secon	
Organic Bodies (A6) Som Mucky Mineral (A7)	Dark Surfa		Caca (CO)		nganese Masses (1.12)	_	- 3	Iplain Soils (F19)
_ 5cm Mucky Mineral (A7		Below Surf Surface (St	and the second	-	Surface (F13) chric (F17)				ght Loamy Soils (F2
Muck Presence (A8) 1 cm Muck (A9)		Surface (St acky Minera			and the same		_	Red Parent Mat	
Depleted Below Dark Su		eyed Matrix			l Vertic (F18) nt Floodplain Soil:	(F19)	_	Other	Dark Surface (TF12)
Thick Dark Surface (A12		170	(12)		ous Bright Loamy			_ other	
ck Dark Buildec (A12	Depleted I			Anomalo	out Digit Louiny	2013 (1 20)			
Restrictive Layer (If Obs	erved)			Remarks: SOIL P.	ARAMETER M	ET.			
						and the second			
Type:				1					

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

CHESTERFIELD - HOPEWELL 230KV REBUILD Stantec Applicant: DOMINION ENERGY VIRGINIA Section/Township/Range: City/County: CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL Subregion (LRR or MLRA): LRR P Start State: 37.344021° -77.392836° VIRGINIA B. CONNERS, A. MCINTYRE Investigator(s): Terminus 37.290017° -77.283916° Date: 1/3/2018 Soil Map Unit Name: KINSTON COMPLEX Summary of Findings: UPLAND ABOVE FLAG 'BYU-7'. Normal Circumstances: X Hydrophytic Vegetation is Present: NWI Classification PEM1A Hydric Soils are Present Disturbed Parameters (see Remarks): Local Relief: NONE Wetland Hydrology is Present Problematic Parameters (see Remarks): Landform Sampled Area is within a Wetland: Atypical Climate/Hydrology (see Remarks): Slope % Hydrology Parameter: Primary Indicators. Secondary Indicators: Surface Soil Cracks (B6) Surface Water (A1) Water Stained Leaves (B9) Sparsely Vegetated Concave Surface (B8) High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10) Saturation (A3) Marl Deposits (B15) Moss Trim Lines (B16) Hydrogen Sulfide Odor (C1) Water Marks (B1) Dry-Season Water Table (C2) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Crayfish Burrows (C8) Drift Deposits (B3) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) Iron Deposits (B5) Thin Muck Surface (C7) Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) ____ Other Shallow Aquitard (D3) FAC-Neutral Test (D5) Sphagnum Moss (D8) Water Depths (inches): Remarks: HYDROLOGY PARAMETER NOT MET. Surface Water: Water Table: Saturated soil: >20 Vegetation Parameter: **Dominant Species** IND Non-Dominant Species IND Stratum Stratum 45 Herbaceous Herbaceous FAC Allium vineale Herbaceous FACU 15 Rumex crispus Herbaceous FAC % Dominant species FAC or wetter: Prevalence Index: NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST Calculated using all species present. Rapid Test for Hydrophytic Vegetation: VEGETATION PARAMETER MET. Remarks: Dominance Test >50%: Prevalence Index is < 3.0: Problematic Hydrophytic Vegetation: Soil Parameter: Matrix Redox Features Loc Depth (inches) Color (Moist) % Color (Moist) % Type Texture 10YR 3/1 100 LOAM 10YR 3/1 10YR 4/4 35 M CLAY LOAM 6-20 65 Hydric Soil Indicators: Histosol (A1) Coast Prairie Redox (A16) Redox Dark Surface (F6) Indicators for Problematic Hydric Soils Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Black Histic (A3) Sandy Gleyed Matrix (S4) Redox Depressions (F8) 1cm Muck (A9) Hydrogen Sulfide (A4) Sandy Redox (S5) Marl (F10) 2cm Muck (A10) Stripped Matrix (S6) Depleted Ochric (F11) Reduced Vertic (F18) Stratified Layers (A5) Organic Bodies (A6) Dark Surface (S7) Iron-Manganese Masses (F12) Piedmont Floodplain Soils (F19) Polyvalue Below Surface (S8) 5cm Mucky Mineral (A7) Umbric Surface (F13) Anomalous Bright Loamy Soils (F20) Muck Presence (A8) Thin Dark Surface (S9) Delta Ochric (F17) Red Parent Material (TF2) 1 cm Muck (A9) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Very Shallow Dark Surface (TF12) Depleted Below Dark Surface (A) Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) Other Thick Dark Surface (A12) Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) SOIL PARAMETER NOT MET. Restrictive Layer (If Observed) Remarks: Type: Depth (inches):

	cantec Applicant: DOMINION				PEWELL 230KV REBUILD			N/A			
				ERGY VIRGINIA			ownship/Range		N/A		
City/0	State: CHE	STERFIELD AND	PRINCE GEOR VIRC	GE COUNTIES; CITY OF	HOPEWELL	Subregion (I	RR or MLRA) Start		LRR I		
Investig		TITE TO SERVICE TO SER	B. YOUNG A				Terminus		.290017° -77		
	Date:			2018		Soil N	Map Unit Name		INSTON CO		
Summary of Findings:				WETLAN	D BELOW FI	LAG 'BYU-7'.					
	egetation is Pr				ircumstances:	X	NWI Classifica		PEMA		
	lric Soils are Pr		-	Disturbed Parameters (Local R		NON		
Sampled Area	Hydrology is Pr is within a We			Problematic Parameters (social Climate/Hydrology (social Climate/Hydro		_	Land	oe %:	FLOODPI 0-1	LAIN	
Hydrology Parameter:			11,7	rear emmerify arology (see remarks).		0.01	70.	0.1		
		Primary Indic	ators:			Secondary Indicators: Surface Soil Cracks (B6)					
Surface Water (A1) X High Water Table (A2) X Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aer	ial Imagery (B7	Aquatic Fa Marl Depo Hydrogen Oxidized I Presence of Recent Iro Thin Mucl	Sulfide Odor (6 Rhizospheres of of Reduced Iron	C1) n Living Roots (C3)		Sparsely Vegetated Concave Surface (B8 Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (C2) X Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9 Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) X FAC-Neutral Test (D5)					
								tral Test (D5) n Moss (D8)			
Water Depths (inches):				Remarks: HYDROL	OGY PARAN	IETER MET.	Spriagriun	1 WOSS (D8)			
Surface Water: Water Table:	Surface Water: Water Table:5										
Saturated soil:	0										
Vegetation Parameter:											
Dominant S				%	Non-Don	ninant Species		Stratum	IND %	%	
Juncus ef	Dominant Species Stratum Juncus effusus Herbaceous Typha latifolia Herbaceous			45 30	Car	ex lurida 190 rugosa		Herbaceous Herbaceous	OBL	20	
% Dominant sp NOTE: SPECIES INDICATO Rapid Test for Hydrophytic Dominance Prevalence Ind Problematic Hydrophytic	R STATUS ACCOR Vegetation:	EDING TO 2016 NATI					evalence Index: using all species pr		FAC	3	
Soil Parameter:											
Double (icalian)	C-1-	Matrix (Maiet)	0/	Color (Mater)	Redox Feat		T		T	THE PERSON	
Depth (inches) 0-2	Color (% 100	Color (Moist)	%	Туре	Loc		SILT LO		
2-20	5Y		87	7.5YR 4/4	10	С	M	SII	LTY CLAY		
				5Y 5/6	3	С	M				
Hydric Soil Indicators:				L							
	Sar Sar Sar Stri Dai Pol Loa ace (Al Loa	A CONTRACTOR OF THE PARTY OF TH	ral (S1) x (S4)) prface (S8) S9) eral (F1) ix (F2)	Depleted D Redox Dep Marl (F10) Depleted O Iron-Mangs Umbric Sur Detta Ochr Reduced V Piedmont F	chric (F11) nnese Masses (I face (F13) ic (F17)	F12)	1	Red Parent	(A9) (A10) ertic (F18) Floodplain S Bright Loa Material (T	Soils (F19) uny Soils (F20)	
	Depleted Below Dark Surface (A Loamy Gleyed Matrix (F2) Thick Dark Surface (A12) Restrictive Layer (If Observed)				AMETER M						

Stantec	Project:Applicant:			WELL 230KV REBU	ЛLD	Section/Township/Range:N/A					
Cit	y/County: CHESTER				Y OF HOPEWELL		LRR or MLRA):		LRR P		
	State:		VIRG			_	Start:		344021° -77.392836°		
Inves	tigator(s): Date:		B. YOUNG A			- Cail N	Terminus: Map Unit Name:		290017° -77.283916° RIA AND SLAGLE SOILS		
	Date.		1/3/2	2016	-	_ 3011 1	viap Omi ivame.	EMFO	MA AND SLAGLE SOILS		
Summary of Findings:					TLAND BELOW I		NIMI CI:C	.:			
	c Vegetation is Present lydric Soils are Present				mal Circumstances eters (see Remarks)		NWI Classifica Local Re		N/A CONCAVE		
	d Hydrology is Present			Problematic Parame	eters (see Remarks)		Landf		TOE OF SLOPE		
	ea is within a Wetland			ical Climate/Hydrol			Slop	e %:	1-3		
Hydrology Parameter:											
	Pr	imary Indica	itors:					Secondary Indicial Cracks (B6)	ators:		
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on A		f Reduced Iron	C1) n Living Roots (C3)		Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) X Geomorphic Position (D2) Shallow Aquitard (D3) X FAC-Neutral Test (D5)						
W . D d C l	Depths (inches): Surface Water:				DOLOGY BARA	METER MET		Moss (D8)			
Water Depths (inches): Surface Water					DROLOGY PARA	METER MET.					
Water Table											
Saturated soil	>20										
Vegetation Parameter:											
Dominan	t Species	Stratur	n IND	9/0	Non-Do	minant Species		Stratum	IND %		
Juncus	effusus	Herbaceo	ous OBL	35	Dichanthel	lium scabriusculi		Herbaceous	OBL 5		
	o rugosa m scoparium japonica		pus FAC FACW FACU	10 10 10 3			revalence Index:		FAC 3		
	FOR STATUS ACCORDING	TO 2016 NATIO	ONAL WETLAND				using all species pro	esent.			
Rapid Test for Hydrophyt	The state of the s			Remarks: VEG	ETATION PARA	METER MET.					
	the Test >50%: X Index is ≤ 3.0 : X	-									
Problematic Hydrophyt		-									
Soil Parameter:								Toron Control			
Depth (inches)	Color (Mois	Matrix	%	Color (Mois	Redox Fea	Type	Loc	DESTRUCTION OF THE PARTY OF THE	Texture		
0-1	10YR 4/2		100	C0101 (19101S	70	туре	Luc		LOAM		
1-20	2.5Y 5/2		75	2.5Y 5/8	5	С	PL		CLAY LOAM		
				10YR 5/6	20	С	M				
Hydric Soil Indicators:				L							
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) 5cm Mucky Mineral (A' Muck Presence (A8) 1 cm Muck (A9) Depleted Below Dark St Thick Dark Surface (A1	Sandy M Sandy C Sandy R Stripped Dark Su 7) Polyvalt Thin Da Loamy I urface (A) Loamy C	airie Redox fucky Miner fleyed Matri: edox (S5) Matrix (S6) rface (S7) ne Below Su rk Surface (Mucky Mine Gleyed Matri d Matrix (F3	al (S1) x (S4) rface (S8) S9) ral (F1) ix (F2)	Deple Redo Mar1 Deple Iron-1 Umbi Delta Redu Piedn	tox Dark Surface (F6) Indicators for Problematic Hydric ox Depressions (F8) (I (F10)				(A9) (A10) ertic (F18) loodplain Soils (F19) Bright Loamy Soils (F20) Material (TF2)		
Restrictive Layer (If Ob.	served)			Remarks: SOII	PARAMETER N	MET.					
Type:	ner rear			Kemarks. SUII	A ANAMETER N						
Depth (inches):											

0-	Project: CHESTERFIELD - HOPEWELL 230KV REBUILD Itantec Applicant: DOMINION ENERGY VIRGINIA Section/Township/Range: N/A									
				RGY VIRGINIA GE COUNTIES; CITY OF	HODEWELL		ownship/Range: LRR or MLRA):		N/A LRR F	
City	State:	CHEST ERFIELD AND	VIRG		HOPEWELL	Subregion (1			344021° -77	
Inves	tigator(s):		B. CONNERS, A				Terminus:	37.	290017° -77	.283916°
	Date:		1/3/2	018		Soil I	Map Unit Name:	EMPOR	JA AND SL	AGLE SOILS
immary of Findings:				UPLAN	D ABOVE FL	AG 'BYY-7'.				
	c Vegetatio	n is Present: X			Circumstances:		NWI Classificat		N/A	
		are Present:		Disturbed Parameters			Local Re		CONVE	
Sampled Are		y is Present:		Problematic Parameters (ical Climate/Hydrology)		_	Landfo Slope		SLOPI 2	E .
ydrology Parameter:	a 15 within	a vectandi	1197	can emilierry drology						
		Primary Indica	itors:					Secondary Indic	ators:	
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)		Aquatic Fa Marl Depo Hydrogen Oxidized R Presence o Recent Iroi	sits (B15) Sulfide Odor (C Rhizospheres on f Reduced Iron	C1) Living Roots (C3)			Sparsely V Drainage P Moss Trim Dry-Seasor Crayfish B Saturation Stunted or	il Cracks (B6) egetated Concav atterns (B10) Lines (B16) n Water Table (C urrows (C8) Visible on Aeria Stressed Plants (c. Position (D2)	C2)	
Inundation Visible on A	erial Image		Surface (C7)	Geomorphic Position (D2) Shallow Aquitard (D3)						
								ral Test (D5)		
Water Dantha (inches)				Remarks: HYDRO	LOGY PARAN	TETED NOT	Sphagnum	Moss (D8)		
Water Depths (inches): Surface Water: Water Table:				Remarks: HIDRO	LOGI PARAM	HETER NOT	ELEK NOT MET.			
Saturated soil:	>20									
egetation Parameter:										
Dominan		Stratun		%		ninant Species				
Liquidambar Pinus		Shrub Shrub	FAC FAC	10 5		ria pumila us argutus		Herbaceous Herbaceous	FAC FAC	15 10
Dichantheliur	n scopariu	n Herbaceo	ous FACW	70		ım vineale		Herbaceous	FACU	. 5
Lonicera	japonica	Vine	FACU	20						
% Dominant							revalence Index:	2.7		
Rapid Test for Hydrophyti		ACCORDING TO 2016 NATIO	ONAL WETLAND		TION PARAM		using all species pre	esent.		
	_	%: X		Kemarks. VEGETA	TIONTAKA	HETEK MET.				
Prevalence I Problematic Hydrophyt										
l Parameter:										
		Matrix			Redox Feat					187 P. A.
Depth (inches) 0-3	•	Color (Moist) 10YR 5/6	% 100	Color (Moist)	%	Туре	Loc		LOAM	
3-20		2.5Y 6/3	85	10YR 6/6	15	C	M		CLAY	
Hydric Soil Indicators:										
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) 5cm Mucky Mineral (A7 Muck Presence (A8)	- - - - - - - - - -	Coast Prairie Redox Sandy Mucky Miner Sandy Gleyed Matrix Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) Polyvalue Below Su Thin Dark Surface (\$	al (S1) x (S4) rface (S8) S9)	Depleted I Redox De Marl (F10 Depleted G Iron-Mang Umbric Su Delta Och	Ochric (F11) ganese Masses (urface (F13) ric (F17)	77)	h	Red Parent	(A9) (A10) ertic (F18) Toodplain S Bright Loa Material (T	Soils (F19) amy Soils (F2 (F2)
1 cm Muck (A9) Depleted Below Dark St Thick Dark Surface (A1)	2)	Loamy Mucky Mine Loamy Gleyed Matri Depleted Matrix (F3	ix (F2)	Piedmont Anomalou	the (T7) Wery Shallow Dark Surface (TF de Veric (F18) the Floodplain Soils (F19) ous Bright Loamy Soils (F20) Other				rface (TF12)	
Restrictive Layer (If Obs Type:	served)			Remarks: SOIL PA	RAMETER N	ОТ МЕТ.				

Sampling Point Number: 48 Project: CHESTERFIELD - HOPEWELL 230KV REBUILD **Stantec** Applicant DOMINION ENERGY VIRGINIA Section/Township/Range City/County: CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL Subregion (LRR or MLRA): LRR P VIRGINIA 37.344021° -77.392836 Investigator(s): B. YOUNG AND C. NICE Terminus: 37.290017° -77.283916° Date 1/3/2018 Soil Map Unit Name: UDORTHENTS, CLAYEY Summary of Findings: WETLAND BELOW 'BYZ' LINE. Hydrophytic Vegetation is Present: Normal Circumstances: X NWI Classification: N/A Hydric Soils are Present X Disturbed Parameters (see Remarks): Local Relief: CONCAVE Wetland Hydrology is Present: Problematic Parameters (see Remarks) Landform FLAT Sampled Area is within a Wetland: Atypical Climate/Hydrology (see Remarks) Slope % Hydrology Parameter: Primary Indicators: Secondary Indicators: Surface Soil Cracks (B6) Surface Water (A1) Water Stained Leaves (B9) Sparsely Vegetated Concave Surface (B8) High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10) Saturation (A3) Moss Trim Lines (B16) Marl Deposits (B15) Water Marks (B1) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Sediment Deposits (B2) X Oxidized Rhizospheres on Living Roots (C3) Cravfish Burrows (C8) Drift Deposits (B3) Saturation Visible on Aerial Imagery (C9) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) Iron Deposits (B5) Thin Muck Surface (C7) X Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) Shallow Aguitard (D3) Other X FAC-Neutral Test (D5) Sphagnum Moss (D8) Water Depths (inches): Remarks: HYDROLOGY PARAMETER MET. Surface Water: Water Table >20 Saturated soil: Vegetation Parameter: **Dominant Species** IND Non-Dominant Species Stratum Stratum IND Liquidambar styraciflua Shrub FAC 10 Herbaceou Andropogon virginio Pinus taeda Shrub FAC 10 Juncus effusus Herbaceous OBL 5 Dichanthelium scoparium Dichanthelium dichotomum Herbaceous FACW Solidago rugosa Herbaceous FAC Herbaceous FAC 10 Setaria pumila Herbaceous FAC 5 Rhexia virginica Herbaceous FACW 10 Rubus argutus Herbaceous FAC 10 Herbaceous Saccharum giganteum FACW 10 % Dominant species FAC or wetter: 100% Prevalence Index: NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST Calculated using all species present. Rapid Test for Hydrophytic Vegetation: Remarks: VEGETATION PARAMETER MET. Dominance Test >50%: Prevalence Index is ≤ 3.0: UNIDENTIFIED NON-DOMINANT SPECIES OF CAREX(5%) PRESENT. Problematic Hydrophytic Vegetation: Soil Parameter: Matrix Redox Features Depth (inches) Color (Moist) 0/0 Color (Moist) 0/0 Type Loc Texture 0-13 2.5Y 5/1 80 10YR 5/8 15 M CLAY LOAM 10YR 3/6 5 PL 13-20 2.5Y 6/6 100 CLAY Hydric Soil Indicators: Coast Prairie Redox (A16) Redox Dark Surface (F6) Histosol (A1) Indicators for Problematic Hydric Soils Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Black Histic (A3) Sandy Gleyed Matrix (S4) Redox Depressions (F8) 1cm Muck (A9) Hydrogen Sulfide (A4) Sandy Redox (S5) Marl (F10) 2cm Muck (A10) Stratified Layers (A5) Stripped Matrix (S6) Depleted Ochric (F11) Reduced Vertic (F18) Organic Bodies (A6) Dark Surface (S7) Iron-Manganese Masses (F12) Piedmont Floodplain Soils (F19) 5cm Mucky Mineral (A7) Polyvalue Below Surface (S8) Umbric Surface (F13) Anomalous Bright Loamy Soils (F20) Muck Presence (A8) Thin Dark Surface (S9) Delta Ochric (F17) Red Parent Material (TF2) 1 cm Muck (A9) Loamy Mucky Mineral (F1) Very Shallow Dark Surface (TF12) Reduced Vertic (F18) Depleted Below Dark Surface (A Loamy Gleved Matrix (F2) Piedmont Floodplain Soils (F19) Other Thick Dark Surface (A12) X Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) SOIL PARAMETER MET. Restrictive Layer (If Observed) Remarks: Type: Depth (inches):

Stantec	Project:Applicant:			WELL 230KV REE RGY VIRGINIA	JOILD						
	ity/County: CHESTER				TY OF HOPEWELL	-			LRR	Р	
	State:		VIRG	INIA		_	Start:		.344021° -7		
Inve	estigator(s):		B. YOUNG A				Terminus:		.290017° -7		
	Date:		1/3/2	018		Soil M	ap Unit Name:	UDC	ORTHENTS	, CLAYEY	
nary of Findings:	tic Vegetation is Present	t: X			UPLAND ABOVE '		WI Classificat	ion:	N/A		
	Hydric Soils are Present				neters (see Remarks):		Local Re		NON		
	nd Hydrology is Present		1		neters (see Remarks):		Landfo		FLA		
Sampled A	rea is within a Wetland	i:	Atypi	cal Climate/Hydro	ology (see Remarks):		Slope	%:	0-1		
logy Parameter:							Secondary Indicators: Surface Soil Cracks (B6)				
	Pr	rimary Indicate	ors:								
Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B- Iron Deposits (B5) Inundation Visible on	2)	Aquatic Fau Marl Deposi Hydrogen Su Oxidized Rh Presence of	ts (B15) alfide Odor (C izospheres on Reduced Iron Reduction in	C1) Living Roots (C3	3)		Sparsely Vegetated Concave Surface (Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (Stunted or Stressed Plants (D1) X Geomorphic Position (D2) Shallow Aquitard (D3) X FAC-Neutral Test (D5) Sphagnum Moss (D8)				
Surface Water Table Saturated soi	e:			Remarks: HY	DROLOGY PARA	METER MET.					
tion Parameter:											
	nt Species	Stratum	IND	%		minant Species	%				
	ar styraciflua	Shrub	FAC	10		nn-Dominant Species Stratum IND ndropogon virginicus Herbaceous FAC Juncus effiusus Herbaceous GBL Solidago rugosa Herbaceous FAC Setaria pumila Herbaceous FAC				5	
	s taeda um scoparium	Shrub Herbaceou	FAC	5 45						5	
	m dichotomum	Herbaceou		10						5 3	
	virginica	Herbaceous		10	Sere	на ринна		Herbaceous	FAC	3	
	argutus	Herbaceou		10			- 1				
	n giganteum	Herbaceous	FACW	10							
	, s.g.carream	Herbaceou	FACW	10							
NOTE: SPECIES INDICA Rapid Test for Hydrophy Dominar	t species FAC or wetter NTOR STATUS ACCORDING Tic Vegetation: 100 Test >50%; X Index is ≤ 3.0: X	: 100%		PLANT LIST	GETATION PARA	Calculated us	valence Index: ing all species pres	2.4 sent.			
NOTE: SPECIES INDICE Rapid Test for Hydrophy Dominat Prevalence Problematic Hydrophy	tt species FAC or wetter NTOR STATUS ACCORDING rtic Vegetation: nce Test >50%; X Index is ≤ 3.0; X rtic Vegetation:	:: 100% TO 2016 NATION		PLANT LIST		Calculated us METER MET.	-				
NOTE: SPECIES INDICA tapid Test for Hydrophy Dominat Prevalence Problematic Hydrophy	tt species FAC or wetter NTOR STATUS ACCORDING rtic Vegetation: nce Test >50%; X Index is ≤ 3.0; X rtic Vegetation:	: 100% TO 2016 NATION		PLANT LIST	Redox Fea	Calculated us METER MET.	-		Textu	re	
NOTE: SPECIES INDICA tapid Test for Hydrophy Dominar Prevalence Problematic Hydrophy rameter:	t species FAC or wetter NTOR STATUS ACCORDING Tic Vegetation: nce Test >50%: Index is ≤ 3.0: X Ttic Vegetation:	: 100% TO 2016 NATION	AL WETLAND I	PLANT LIST Remarks: VE	Redox Fea	Calculated us METER MET.	ing all species pres	sent.	Textus NE SANDY		
NOTE: SPECIES INDICA dapid Test for Hydrophy Dominar Prevalence Problematic Hydrophy rameter: Depth (inches)	t species FAC or wetter NTOR STATUS ACCORDING 'tic Vegetation: nce Test >50%: X Index is ≤ 3.0: X 'tic Vegetation: Color (Mois	: 100% TO 2016 NATION	AL WETLAND I	PLANT LIST Remarks: VE	Redox Fea	Calculated us METER MET.	ing all species pres	FIN		LOAM	
NOTE: SPECIES INDIC Rapid Test for Hydrophy Dominar Prevalence Problematic Hydrophy rameter: Depth (inches) 0-4	t species FAC or wetter NTOR STATUS ACCORDING Tric Vegetation: Ince Test >50%: X Index is ≤ 3.0: Color (Mois 2.5Y 5/2	: 100% TO 2016 NATION	% 100	PLANT LIST Remarks: VEC	Redox Fea	Calculated us METER MET. tures Type	ing all species pres	FIN	NE SANDY	LOAM	
NOTE: SPECIES INDICA Rapid Test for Hydrophy Dominan Prevalence Problematic Hydrophy rameter: Depth (inches) 0-4 4-20	t species FAC or wetter NTOR STATUS ACCORDING Tric Vegetation: Ince Test >50%: X Index is ≤ 3.0: Color (Mois 2.5Y 5/2	: 100% TO 2016 NATION	% 100	PLANT LIST Remarks: VEO Color (Mo 2.5Y 4/1	Redox Fea	Calculated us METER MET. tures Type	Loc	FIN	NE SANDY	LOAM	
NOTE: SPECIES INDICA Rapid Test for Hydrophy Dominar Prevalence Problematic Hydrophy rameter: Depth (inches) 0-4 4-20 dric Soil Indicators:	t species FAC or wetter ATOR STATUS ACCORDING tric Vegetation: Londex is ≤ 3.0: Color (Moi 2.5Y 5/2 2.5Y 6/4	:: 100% TO 2016 NATION	% 100 80	Color (Mo 2.5Y 4/1 10YR 5/4	Redox Fea % % 15 6 5	Calculated us METER MET. tures Type D C	Loc M M	FIN FIN	NE SANDY NE SANDY	LOAM LOAM	
NOTE: SPECIES INDIC Rapid Test for Hydrophy Dominar Prevalence Problematic Hydrophy rameter: Depth (inches) 0-4 4-20 dric Soil Indicators: Histosol (A1)	t species FAC or wetter STOR STATUS ACCORDING The Vegetation: Ince Test >50%; Index is ≤ 3.0; Color (Mois 2.5Y 5/2 2.5Y 6/4 Coast Price Coast Price Control of the Color (Mois 2.5Y 5/2 2.5Y 6/4)	Matrix st)	% 100 80	Color (Mo 2.5Y 4/1 10YR 5/6	Redox Fea	Calculated us METER MET. tures Type D C	Loc M M	FIN	NE SANDY NE SANDY	LOAM LOAM	
NOTE: SPECIES INDICA Rapid Test for Hydrophy Dominar Prevalence Problematic Hydrophy Irameter: Depth (inches) 0-4 4-20 dric Soil Indicators: Histosol (A1) Histic Epipedon (A2)	t species FAC or wetter VIOR STATUS ACCORDING rtic Vegetation: nee Test >50%: Index is ≤ 3.0: Color (Moi 2.5Y 5/2 2.5Y 6/4 Coast Pi Sandy N	:: 100% TO 2016 NATION	% 100 80 A16) (S1)	Color (Mo 2.5Y 4/1	Redox Fea	Calculated us METER MET. tures Type D C	Loc M M	FIN FIN dicators for Pro-	NE SANDY	LOAM LOAM	
NOTE: SPECIES INDICA Rapid Test for Hydrophy Dominan Prevalence Problematic Hydrophy rameter: Depth (inches) 0-4 4-20 dric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3)	t species FAC or wetter NOR STATUS ACCORDING Ticle Vegetation: Ticle Vegetation: Color (Mois 2.5Y 5/2 2.5Y 6/4 Coast Pl Sandy M Sandy C	Matrix st) rairie Redox (Aucky Mineral Gleyed Matrix	% 100 80 A16) (S1)	Color (Mo 2.5Y 4/1 10YR 5/6 Red Red Per Red R	Redox Fea ist) % 1 15 6 5 ox Dark Surface (F6) eleted Dark Surface (F0) ox Depressions (F8)	Calculated us METER MET. tures Type D C	Loc M M	FIN FIN dicators for Pro	NE SANDY NE SANDY oblematic F	LOAM LOAM	
NOTE: SPECIES INDICA Rapid Test for Hydrophy Dominar Prevalence Problematic Hydrophy Irameter: Depth (inches) 0-4 4-20 dric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4)	t species FAC or wetter NTOR STATUS ACCORDING Tric Vegetation: Lindex is ≤ 3.0: Color (Mois 2.5Y 5/2 2.5Y 6/4 Coast P. Sandy N Sandy C Sandy R Sandy R	Matrix st) rairie Redox (// Mucky Mineral Gleyed Matrix (Redox (SS))	% 100 80 A16) (S1)	Color (Mo 2.5Y 4/1 10YR 5/6 Red Dep Red Mar	Redox Fea ist) % 1 15 6 5 iox Dark Surface (F6) eleted Dark Surface (I ox Depressions (F8)	Calculated us METER MET. tures Type D C	Loc M M	FIN FIN dicators for Pro	NE SANDY NE SANDY oblematic F (A9) (A10)	LOAM LOAM	
NOTE: SPECIES INDICA Rapid Test for Hydrophy Dominar Prevalence Problematic Hydrophy strameter: Depth (inches) 0-4 4-20 dric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5)	t species FAC or wetter ATOR STATUS ACCORDING ric Vegetation: Loce Test >50%: Color (Moi: 2.5Y 5/2 2.5Y 6/4 Coast Pr. Sandy M. Sandy C. Sandy C.	matrix st) Matrix st) Matrix st) Matrix st) Matrix (S6)	% 100 80 A16) (S1)	Color (Mo 2.5Y 4/1 10YR 5/6 Red Dep Red Mar Dep	Redox Fea ist) % 1 15 6 5 ox Dark Surface (F6) eleted Dark Surface (10 ox Depressions (F8) 1 (F10) eleted Ochric (F11)	Calculated us METER MET. tures Type D C	Loc M M	FIN FIN dicators for Pro 1cm Muck 2cm Muck Reduced Vo	DE SANDY DE SANDY Deblematic F (A9) (A10) ertic (F18)	(LOAM (LOAM Hydric Soils	
NOTE: SPECIES INDIC Rapid Test for Hydrophy Dominar Prevalence Problematic Hydrophy trameter: Depth (inches) 0-4 4-20 dric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6)	t species FAC or wetter STOR STATUS ACCORDING rtic Vegetation: cee Test >50%: Index is ≤ 3.0: Color (Mois 2.5Y 5/2 2.5Y 6/4 Coast Pi Sandy N Sandy C Sandy R Strippee Dark Su	matrix st) Matrix st) rairie Redox (Aucky Mineral Sleyed Matrix (S6) I Matrix (S6) Irface (S7)	% 100 80 A16) (S1) S4)	Color (Mo 2.5Y 4/1 10YR 5/6 Red Dep Red Mar Dep Iron	Redox Fea 15	Calculated us METER MET. tures Type D C	Loc M M	FIN FIN dicators for Pro 1cm Muck 2cm Muck Reduced V. Piedmont F	NE SANDY NE SANDY oblematic F (A9) (A10) ertic (F18)	LOAM LOAM LOAM Lydric Soils Soils (F19)	
NOTE: SPECIES INDICA Rapid Test for Hydrophy Dominar Prevalence Problematic Hydrophy strameter: Depth (inches) 0-4 4-20 dric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5)	t species FAC or wetter STOR STATUS ACCORDING rtic Vegetation: cee Test >50%: Index is ≤ 3.0: Color (Mois 2.5Y 5/2 2.5Y 6/4 Coast Pi Sandy N Sandy C Sandy R Strippee Dark Su	matrix st) Matrix st) Matrix st) Matrix st) Matrix (S6)	% 100 80 A16) (S1) S4)	Color (Mo 2.5Y 4/1 10YR 5/6 Red Dep Red Mar Dep Iron	Redox Fea ist) % 1 15 6 5 ox Dark Surface (F6) eleted Dark Surface (10 ox Depressions (F8) 1 (F10) eleted Ochric (F11)	Calculated us METER MET. tures Type D C	Loc M M	FIN FIN dicators for Pro 1cm Muck 2cm Muck Reduced V. Piedmont F	NE SANDY NE SANDY oblematic F (A9) (A10) ertic (F18)	(LOAM (LOAM Hydric Soils	
NOTE: SPECIES INDIC Rapid Test for Hydrophy Dominar Prevalence Problematic Hydrophy Irameter: Depth (inches) 0-4 4-20 dric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6)	t species FAC or wetter STATUS ACCORDING Tict Vegetation: Color (Moi 2.5Y 5/2 2.5Y 6/4 Coast Pr Sandy M Sandy C Sandy R Stripped Dark Su To Polyvalu Polyvalu	matrix st) Matrix st) rairie Redox (Aucky Mineral Sleyed Matrix (S6) urface (S7)	% 100 80 A16) (S1) (S4)	Color (Mo 2.5Y 4/1 10YR 5/6 Red Dep Red Mar Dep Iron Uml	Redox Fea 15	Calculated us METER MET. tures Type D C	Loc M M	FIN FIN dicators for Pro 1cm Muck 2cm Muck Reduced V. Piedmont F	ne sandy ne sandy neblematic F (A9) (A10) ertic (F18) floodplain S Bright Los	V LOAM V LOAM V LOAM Aydric Soils Soils (F19) amy Soils (F2)	
NOTE: SPECIES INDICA Rapid Test for Hydrophy Dominar Prevalence Problematic Hydrophy rameter: Depth (inches) 0-4 4-20 dric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) Sem Mucky Mineral (A	t species FAC or wetter NTOR STATUS ACCORDING Title Vegetation: Lindex is \(\leq 3.0 \); Value Vegetation: Color (Mois 2.5Y 5/2 2.5Y 6/4 Coast P. Sandy R. Sandy R. Stripped Dark Su Dark Su Thin Da	Matrix st) Matrix st) Matrix st) Gleyed Matrix (S6) surface (S7) ue Below Surfa	% 100 80 A16) (S1) S4)	Color (Mo 2.5Y 4/1 10YR 5/6 Red Dep Red Mar Dep Iron Uml	Redox Fea ist) % 1 15 6 5 6 5 cox Dark Surface (F6 eleted Dark Surface (iox Depressions (F8) 1 (F10) eleted Obric (F11) -Manganese Masses bric Surface (F13)	Calculated us METER MET. tures Type D C	Loc M M	FIN FIN dicators for Pro 1cm Muck 2cm Muck Reduced V. Piedmont out	Delematic F (A9) (A10) ertic (F18) Floodplain S Bright Loa Material (V LOAM V LOAM V LOAM Aydric Soils Soils (F19) amy Soils (F2)	
NOTE: SPECIES INDIC Rapid Test for Hydrophy Dominar Prevalence Problematic Hydrophy rameter: Depth (inches) 0-4 4-20 dric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) 5cm Mucky Mineral (A Muck Presence (A8)	t species FAC or wetter NTOR STATUS ACCORDING Tric Vegetation: Ince Test >50%: Color (Mois 2.5Y 5/2 2.5Y 6/4 Coast P. Sandy N. Sandy N. Sandy R. Stripped Dark Su. Thin Da Loamy I.	Matrix st) Matrix st) Matrix st) Matrix st) Matrix st) Matrix st) Mucky Mineral ileyed Matrix (Redox (S5) il Matrix (S6) urface (S7) ue Below Surfar surface (S9)	% 100 80 A16) (S1) S4) ace (S8) (I (F1)	Color (Mo 2.5Y 4/1 10YR 5/6 Red Dep Red Mar Dep Iron Umil	Redox Fea ist) % 1 15 6 5 ox Dark Surface (F6 eleted Dark Surface (iox Depressions (F8) 1 (F10) leted Ochric (F11)Manganese Masses bric Surface (F13) ta Ochric (F17)	Calculated us METER MET. tures Type D C C F77)	Loc M M	FIN FIN dicators for Pro 1cm Muck 2cm Muck Reduced V. Piedmont or Anomalous Red Parent	Delematic F (A9) (A10) ertic (F18) Floodplain S Bright Loa Material ((LOAM /	
NOTE: SPECIES INDICA Rapid Test for Hydrophy Dominar Prevalence Problematic Hydrophy rameter: Depth (inches) 0-4 4-20 dric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) Stem Mucky Mineral (A Muck Presence (A8) 1 cm Muck (A9)	t species FAC or wetter STOR STATUS ACCORDING ric Vegetation: Index is ≤ 3.0: Color (Mois 2.5Y 5/2 2.5Y 6/4 Coast Proper Sandy North State Stripped Dark Surface (A) Coamy Grand Dames Surface (A) Loamy Grand Loamy Grand Surface (A)	matrix st) Matrix Sedox (S5) Matrix (S6) Matrix (S6) Matrix (S6) Matrix (S7) Matrix (S6) Mucky Mineral	% 100 80 A16) (S1) S4) ace (S8) (I (F1)	Color (Mo 2.5Y 4/1 10YR 5/6 Red Dep Red Mar Dep Iron Uml Delt Red Pied	Redox Fea ist) % 1 15 6 5 iox Dark Surface (F6 eleted Dark Surface (Iox Depressions (F8) 1 (F10) eleted Ochric (F11) -Manganese Masses bric Surface (F13) ta Ochric (F17) uced Vertic (F18)	Calculated us METER MET. tures Type D C C F12)	Loc M M	FIN FIN dicators for Pro lem Muck 2cm Muck Reduced Ve Piedmont F Anomalous Red Parent Very Shallo	Delematic F (A9) (A10) ertic (F18) Floodplain S Bright Loa Material ((LOAM /	
NOTE: SPECIES INDICA Rapid Test for Hydrophy Dominar Prevalence Problematic Hydrophy rameter: Depth (inches) 0-4 4-20 dric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) 5 cm Mucky Mineral (A Muck Presence (A8) 1 cm Muck (A9) Depleted Below Dark S Thick Dark Surface (A	t species FAC or wetter NTOR STATUS ACCORDING THE Vegetation: Color (Mois 2.5Y 5/2 2.5Y 6/4 Coast Pt Sandy N Sandy C Sandy R Stripped Dark Su Thin Da Loamy I Surface (Al Loamy 0 12) Depleted	matrix st) Matrix st) Matrix st) Matrix st) Matrix st) Mucky Mineral Gleyed Matrix (S6) Mucky Mirera Gleyed Matrix	% 100 80 A16) (S1) S4) ace (S8) (I (F1)	Color (Mo 2.5Y 4/1 10YR 5/6 Red Dep Red Mar Dep Iron Uml Delt Red Pied Ano	Redox Fea ist) % 1 15 6 5 ox Dark Surface (F6 ideted Dark Surface (iox Depressions (F8) 1 (F10) -Manganese Masses bric Surface (F13) ta Ochric (F17) uced Vertic (F18) dmont Floodplain Soi malous Bright Loam	Calculated us METER MET. tures Type D C F7) (F12) Is (F19) y Soils (F20)	Loc M M	FIN FIN dicators for Pro lem Muck 2cm Muck Reduced Ve Piedmont F Anomalous Red Parent Very Shallo	Delematic F (A9) (A10) ertic (F18) Floodplain S Bright Loa Material ((LOAM /	
NOTE: SPECIES INDIC Rapid Test for Hydrophy Dominar Prevalence Problematic Hydrophy rameter: Depth (inches) 0-4 4-20 dric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) 5cm Mucky Migneral (A Muck Presence (A8) 1 cm Muck (A9) Depleted Below Dark S	t species FAC or wetter NTOR STATUS ACCORDING THE Vegetation: THE VEGETATION STATUS ACCORDING THE VEGETATION STATUS Color (Mois 2.5Y 5/2 2.5Y 6/4 Coast P. Sandy N. Sandy N. Sandy R. Stripped Dark Su. Sandy R. Stripped Dark Su. Thin Da Loamy I. Surface (Al. Loamy 6 12) Depleted bserved)	matrix st) Matrix st) Matrix st) Matrix st) Matrix st) Mucky Mineral Gleyed Matrix (S6) Mucky Mirera Gleyed Matrix	% 100 80 A16) (S1) S4) ace (S8) (I (F1)	Color (Mo 2.5Y 4/1 10YR 5/6 Red Dep Red Mar Dep Iron Uml Delt Red Pied Ano	Redox Fea 15 96 15 6 5 5 6 5 6 7 7 7 8 7 9 7 15 7 16 7 16 7 16 7 16 7 17 7 18 7 18 7 19 7 10	Calculated us METER MET. tures Type D C F7) (F12) Is (F19) y Soils (F20)	Loc M M	FIN FIN dicators for Pro lem Muck 2cm Muck Reduced Ve Piedmont F Anomalous Red Parent Very Shallo	Delematic F (A9) (A10) ertic (F18) Floodplain S Bright Loa Material ((LOAM /	

•	Project:	CHESTER	FIELD - HOPE	EWELL 230KV REBUILD)						
Stantec	Applicant:			ERGY VIRGINIA			nship/Range: _		N/A		
	City/County: _ State:	CHESTERFIELD AND		GE COUNTIES; CITY OF	FHOPEWELL	Subregion (LRI	R or MLRA): _ Start:	27	LRR P 344021° -77		
I	nvestigator(s):			A. MCINTYRE			Terminus:		290017° -77		
	Date:			2018		Soil Mag	Unit Name:		ORTHENTS,		
Summary of Findings:				LIDE AN	D ABOVE FLA	C IDCA E 1					
	hytic Vegetatio	on is Present: X		070,0110,070,0	Circumstances:		WI Classification	on:	N/A		
.,,		are Present:		Disturbed Parameters			Local Reli		CONVE	EX	
	etland Hydrolog			Problematic Parameters	_		Landfor	_	FLAT		
	Area is within	a Wetland:	Atyp	oical Climate/Hydrology	(see Remarks):		Slope	%:	0-1		
Hydrology Parameter:		Primary Indica	tors:			Secondary Indicators:					
Surface Water (A1) High Water Table (Saturation (A3) Water Marks (B1)		Aquatic Fa				Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (C2)					
Sediment Deposits	(B2)			n Living Roots (C3)		_	Crayfish Bu		-2)		
Drift Deposits (B3)			Reduced Iron	And the second s				isible on Aeria	l Imagery (C9)	
Algal Mat or Crust	(B4)			Tilled Soils (C6)		_	_	tressed Plants ((D1)		
Iron Deposits (B5) Inundation Visible	on Aerial Image		Surface (C7)			_	Shallow Aqu	Position (D2)			
	on remarkable of remarkable (B7)one					_					
							Sphagnum N	loss (D8)			
Water Depths (inches):				Remarks: HYDRO	LOGY PARAM	IETER NOT ME	ET.				
Surface W Water Ta	-										
Saturated											
Vegetation Parameter:											
Domi	inant Species	Stratun	IND	%	Non-Don	ninant Species		Stratum	IND	%	
Pi	mıs taeda	Shrub	FAC	5	Dichantheli	um dichotomum		Herbaceous	FAC	20	
	nbar styraciflu ercus rubra	Shrub	FAC FACU	5 3		is argutus ria pumila	Herbaceous Herbaceous	10 10			
	ogon virginicus			50	Seiar	и рити		rieroaceous	FAC	10	
Schedono	rus arundinace	us Herbaceo	us FAC	35							
							1				
				1 11							
0/ Di	TA	C				D	Lance To deco	2.0			
	nant species FA	C or wetter: 80% ACCORDING TO 2016 NATIO	NAL WETLAND	PLANT LIST			alence Index:	3.0			
Rapid Test for Hydror					ATION PARAM		8 1 1				
	nance Test >50										
	nce Index is ≤ 3										
Problematic Hydrop	phytic Vegetation	on:									
Soil Parameter:											
		Matrix			Redox Featu	ıres			NAME OF	Sale of the Sale	
Depth (inches)		Color (Moist)	%	Color (Moist)	%	Type	Loc		Texture		
0-8 8-20		2.5Y 5/4 2.5Y 6/3	100						LOAM		
8-20		2.31 0/3	100						LUAIVI		
Hydric Soil Indicators:											
Histosol (A1)		Coast Prairie Redox (ark Surface (F6)	*\	Ind	icators for Pro	blematic H	ydric Soils	
Histic Epipedon (A2 Black Histic (A3)	_	Sandy Mucky Minera Sandy Gleyed Matrix			Dark Surface (F7 epressions (F8)	/)		1cm Muck	(A9)		
Hydrogen Sulfide (A	N4)	Sandy Redox (S5)	(51)	Marl (F10	A service of the serv		-	2cm Muck			
Stratified Layers (A:	_	Stripped Matrix (S6)			Ochric (F11)			Reduced Ve			
Organic Bodies (A6	_	Dark Surface (S7)			ganese Masses (I	F12)	_	Piedmont F			
5cm Mucky Mineral		Polyvalue Below Sur			Surface (F13)		_			my Soils (F20)	
Muck Presence (A8) 1 cm Muck (A9)	_	Thin Dark Surface (S Loamy Mucky Miner		Delta Och	and the section		_	Red Parent			
Depleted Below Dar	rk Surface (A)	Loamy Gleyed Matrix			Vertic (F18) Floodplain Soils	(F19)	-	Other	w Dark Sui	rface (TF12)	
Thick Dark Surface	_	Depleted Matrix (F3)	. (1 2)		us Bright Loamy		_				
Restrictive Layer (If				Remarks: SOIL PA	RAMETER NO	OT MET.					
Depth (inch	ype: nes):										

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

CHESTERFIELD - HOPEWELL 230KV REBUILD Project: Applicant: DOMINION ENERGY VIRGINIA Section/Township/Range: N/A Stantec City/County: CHESTERFIELD AND PRINCE GEORGE COUNTIES: CITY OF HOPEWELL Subregion (LRR or MLRA): LRR P State: VIRGINIA Start 37.379681° -77.387324° A MCINTYRE E SHAW Investigator(s): Terminus 37.290017° -77.283916° Date: 7/25/2018 Soil Map Unit Name: OCHREPTS AND UDULTS Summary of Findings: WETLAND BELOW FLAG AMC-9. Hydrophytic Vegetation is Present: Normal Circumstances: X NWI Classification N/A Hydric Soils are Present Disturbed Parameters (see Remarks): Local Relief CONCAVE Wetland Hydrology is Present Problematic Parameters (see Remarks): Landform DRAINAGEWAY Sampled Area is within a Wetland: Atypical Climate/Hydrology (see Remarks): Slope %: 0-1 Hydrology Parameter: Primary Indicators. Secondary Indicators: Surface Soil Cracks (B6) X Surface Water (A1) Water Stained Leaves (B9) Sparsely Vegetated Concave Surface (B8) Aquatic Fauna (B13) High Water Table (A2) Drainage Patterns (B10) X Saturation (A3) Marl Deposits (B15) Moss Trim Lines (B16) Water Marks (B1) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) X Crayfish Burrows (C8) Drift Deposits (B3) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) Iron Deposits (B5) Thin Muck Surface (C7) X Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) Other Shallow Aquitard (D3) X FAC-Neutral Test (D5) Sphagnum Moss (D8) Water Depths (inches): HYDROLOGY PARAMETER MET. Surface Water: Water Table: Saturated soil: 0 Vegetation Parameter: Dominant Species Liquidambar styraciflua Stratum IND Non-Dominant Species Stratum IND % FAC Peltandra virginica Herbaceous OBL Liquidambar styraciflua Quercus phellos FAC FACW 15 10 Sapling Dichanthelium clandestinum Herbaceous FACW 15 Sapling Eleocharis acicularis Herbaceous OBL Liquidambar styraciflua Quercus phellos FAC FACW Shrub Dulichium arundinaceum Herbaceous OBL Boehmeria cylindrica Shrub Herbaceous FACW 5 Magnolia virginiana Typha latifolia Herbaceous 40 Herbaceous OBL 25 Campsis radicans Vine FAC 10 Lonicera japonica Vine FACU % Dominant species FAC or wetter: Prevalence Index: NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST Calculated using all species present. Rapid Test for Hydrophytic Vegetation: Remarks: VEGETATION PARAMETER MET. Dominance Test >50%: Prevalence Index is ≤ 3.0 : Problematic Hydrophytic Vegetation: Soil Parameter: Matrix Redox Features Depth (inches) Color (Moist) Color (Moist) Туре Texture 85 7.5YR 6/6 SANDY CLAY LOAM Hydric Soil Indicators Coast Prairie Redox (A16) Redox Dark Surface (F6) Indicators for Problematic Hydric Soils Histosol (A1) Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Black Histic (A3) Redox Depressions (F8) 1cm Muck (A9) Hydrogen Sulfide (A4) Sandy Redox (S5) Marl (F10) 2cm Muck (A10) Stripped Matrix (S6) Depleted Ochric (F11) Stratified Layers (A5) Reduced Vertic (F18) Organic Bodies (A6) Dark Surface (S7) Iron-Manganese Masses (F12) Piedmont Floodplain Soils (F19) 5cm Mucky Mineral (A7) Polyvalue Below Surface (S8) Umbric Surface (F13) Anomalous Bright Loamy Soils (F20) Muck Presence (A8) Thin Dark Surface (S9) Delta Ochric (F17) Red Parent Material (TF2) 1 cm Muck (A9) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Very Shallow Dark Surface (TF12) Depleted Below Dark Surface (A1 Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) Other X Depleted Matrix (F3) Thick Dark Surface (A12) Anomalous Bright Loamy Soils (F20) Restrictive Layer (If Observed) Remarks: SOIL PARAMETER MET. Type: Depth (inches):

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

CHESTERFIELD - HOPEWELL 230KV REBUILD Project Applicant DOMINION ENERGY VIRGINIA Section/Township/Range Stantec City/County: CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL Subregion (LRR or MLRA) LRR P VIRGINIA 37.379681° -77.387324° A. MCINTYRE, E. SHAW Terminus: Investigator(s): 37.290017° -77.283916° Date 7/25/2018 Soil Map Unit Name: OCHREPTS AND UDULTS **Summary of Findings:** UPLAND ABOVE AMC-8. Normal Circumstances: X Hydrophytic Vegetation is Present: NWI Classification N/A Hydric Soils are Present Disturbed Parameters (see Remarks): Local Relief: CONCAVE Wetland Hydrology is Present Problematic Parameters (see Remarks): Landform DRAINAGEWAY Sampled Area is within a Wetland: Atypical Climate/Hydrology (see Remarks) Slope % 2-4 Hydrology Parameter: Primary Indicators: Secondary Indicators: Surface Soil Cracks (B6) Surface Water (A1) Sparsely Vegetated Concave Surface (B8) Water Stained Leaves (B9) High Water Table (A2) Drainage Patterns (B10) Aquatic Fauna (B13) Moss Trim Lines (B16) Marl Deposits (B15) Saturation (A3) Water Marks (B1) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (C3) Sediment Deposits (B2) Cravfish Burrows (C8) Drift Deposits (B3) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) X Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) Inundation Visible on Aerial Imagery (B7) Shallow Aquitard (D3) Other FAC-Neutral Test (D5) Sphagnum Moss (D8) Water Depths (inches): Remarks: HYDROLOGY PARAMETER NOT MET. Surface Water: Water Table: Saturated soil: Vegetation Parameter: Non-Dominant Species Stratum **Dominant Species** Stratum Liquidambar styraciflua Acer rubrum Sapling Sapling 20 5 Verbesina alternifolia Solidago altissima Herbaceo FAC FACU 10 FAC Herbaceous 10 Quercus phellos Pinus taeda Shrub FACW Phytolacca americana Herbaceous Shrub FAC Eupatorium capillifolium Herbaceous FACU Liquidambar styraciflua FAC 5 25 Rubus argutus Dichanthelium clandestinum Herbaceous FAC FACW 20 Herbaceous 20 15 Pteridium aquilinum Herbaceous FACU Vitis rotundifolia Vine FAC Smilax rotundifolia Vine FAC 5 Lonicera japonica Vine FACU % Dominant species FAC or wetter: 82% Prevalence Index: NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST Rapid Test for Hydrophytic Vegetation Remarks: VEGETATION PARAMETER MET. Dominance Test >50%: Prevalence Index is ≤ 3.0: Problematic Hydrophytic Vegetation: Soil Parameter: Matrix Redox Features Depth (inches) Color (Moist) 0/0 Color (Moist) Туре Loc Texture 1-8 10YR 4/3 100 CLAY LOAM 8-20 10YR 5/3 100 CLAY LOAM Hydric Soil Indicators Coast Prairie Redox (A16) Redox Dark Surface (F6) Indicators for Problematic Hydric Soils Histosol (A1) Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Black Histic (A3) Sandy Gleyed Matrix (S4) Redox Depressions (F8) 1cm Muck (A9) Hydrogen Sulfide (A4) Sandy Redox (S5) Marl (F10) 2cm Muck (A10) Depleted Ochric (F11) Stratified Layers (A5) Stripped Matrix (S6) Reduced Vertic (F18) Organic Bodies (A6) Iron-Manganese Masses (F12) Piedmont Floodplain Soils (F19) Dark Surface (S7) 5cm Mucky Mineral (A7) Polyvalue Below Surface (S8) Umbric Surface (F13) Anomalous Bright Loamy Soils (F20) Muck Presence (A8) Thin Dark Surface (S9) Delta Ochric (F17) Red Parent Material (TF2) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Very Shallow Dark Surface (TF12) 1 cm Muck (A9) Depleted Below Dark Surface (A1 Loamy Gleved Matrix (F2) Piedmont Floodplain Soils (F19) Other Thick Dark Surface (A12) Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) SOIL PARAMETER NOT MET. Restrictive Layer (If Observed) Remarks: Type: Depth (inches)

	Project: CH Applicant: ty/County: CHESTERFI	DOMINIC	ON ENE	WELL 230KV I	A						
9	State:		VIRG	INIA	IT OF HOTEWELL	_ Subregion (379681° -77.		
Inves	stigator(s):	A. MC	CINTYR	E, E. SHAW			Terminus:		290017° -77.	.283916°	
	Date:		7/25/2	2018		_ Soil	Map Unit Name:	OC	HREPTS AND	UDULTS	
Summary of Findings:					UPLAND ABOV	VE AMB-9					
	ic Vegetation is Present:	X		N	ormal Circumstance		NWI Classificat	tion:	N/A		
I	Hydric Soils are Present:			Disturbed Parar	meters (see Remarks):	Local Re	lief:	CONVE		
	nd Hydrology is Present:				meters (see Remarks		Landfo	-	SLOPE		
	ea is within a Wetland:		Atypi	ical Climate/Hyd	rology (see Remarks):	Slope	e %:	3-4		
Hydrology Parameter:	Prin	ary Indicators:				т —		Secondary Indic	ators:		
	17111	ary mateutors.						l Cracks (B6)	uiors.		
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4 Iron Deposits (B5) Inundation Visible on A		Presence of Redu	13) 15) Odor (Coheres on ced Iron oction in T	(1) Living Roots (C			Sparsely Vegetated Concave Surface Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Sphagnum Moss (D8)				
Water Depths (inches): Surface Water Water Table Saturated soil				Remarks: HY	YDROLOGY PARA	AMETER NOT		MOSS (DO)			
Vegetation Parameter:											
	on tulipifera taeda m vimineum argutus a cuneata	Stratum Sapling Shrub Shrub Shrub Herbaceous Herbaceous Herbaceous Vine	FAC FAC FACU FAC FAC FAC FACU FACU	96 30 10 5 5 25 20 15	Liriod Qu Liriod Liriod Fraxin Lesp Dichamh Liquide Eupato Sorg	endron tulipifera ercus phellos endron tulipifera endron tulipifera ium corymbosum us pennsylvanica elium clandestim tum caryflum capillifolium hum halepense chella repens	as phellos Sapling FACW on ulipifera Shrub FACU s taeda Shrub FACU corymbosum Shrub FACW ear cuneata Herbaceous FACU ara tyraciflua Herbaceous FACU ar capillifolium Herbaceous FACU thalepense HACU halepense HACW FACW FACW FACW FACW FACW FACW FACW F				
NOTE: SPECIES INDICA Rapid Test for Hydrophy Dominan	ce Test >50%: X Index is ≤ 3.0:	63%) 2016 NATIONAL W	ETLAND F		EGETATION PARA	Calculated	revalence Index: using all species pre	3,3 sent.	-		
	M	atrix		1	Redox Fe	eatures					
Depth (inches)	Color (Moist)		%	Color (M	oist) %	Type	Loc		Texture		
0-20	2.5Y 6/4		100	L				SA	NDY CLAY	LOAM	
Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) 5cm Mucky Mineral (A' Muck Presence (A8) 1 cm Muck (A9) Depleted Below Dark S Thick Dark Surface (A1)	Sandy Mu Sandy Gle Sandy Rec Stripped M Dark Surfi Polyvalue Thin Dark Loamy Mu	fatrix (S6)	S8)	De Rei	dox Dark Surface (F pleted Dark Surface dox Depressions (F8 rl (F10) pleted Ochric (F11) n-Manganese Masse bric Surface (F13) tla Ochric (F17) duced Vertic (F18) dmont Floodplain Sc omalous Bright Loar	(F7)) s (F12) oils (F19)	<i>h</i>	Anomalous Red Parent	(A9) (A10) 'ertic (F18) Floodplain Se	oils (F19) my Soils (F20) F2)	
Restrictive Layer (If Ob Type Depth (inches)				Remarks: SO	IL PARAMETER	NOT MET.					

1000				WELL 230KV REBUIL	.D					
	Applicant:			RGY VIRGINIA GE COUNTIES; CITY OF H	ODEWELL		ownship/Range: _ LRR or MLRA):		N/A LRR F	
Juli Juli	State:	IELD AND PRINC	VIRG		OPEWELL	. Subregion (i	Start:	37.	379681° -77	
Inves	tigator(s):	A. MC		E, E. SHAW			Terminus:		290017° -77	
	Date:		7/25/2	2018		Soil !	Map Unit Name:	OC	HREPTS AND	UDULTS
Summary of Findings:				WETLAN	D RELOW E	LAG AMB-5.				
	c Vegetation is Present:	X			rcumstances:		NWI Classificati	on:	PEM1A	A .
	lydric Soils are Present:	X		Disturbed Parameters (s			Local Reli	_	NONE	
	d Hydrology is Present:	X		Problematic Parameters (s		_	Landfor	_	TOE OF SI	_OPE
	ea is within a Wetland:	X	Atypi	ical Climate/Hydrology (s	ee Remarks):		Slope	%:	0-1	
Hydrology Parameter:	D-i-	nary Indicators:					· ·	econdary India	antono.	
	PTII	nary Indicators:						Cracks (B6)	cators:	
Surface Water (A1)		Water Stained Lea	eves (B9)					getated Concar	ve Surface (I	B8)
X High Water Table (A2)		Aquatic Fauna (B				li i	Drainage Pa			
X Saturation (A3) Water Marks (B1)		Marl Deposits (B1 Hydrogen Sulfide		1)			-Moss Trim I	Lines (B16) Water Table (C2)	
Sediment Deposits (B2)				Living Roots (C3)			Crayfish Bu		(2)	
Drift Deposits (B3)		ced Iron					isible on Aeria	al Imagery (C9)	
Algal Mat or Crust (B4)			Tilled Soils (C6)				tressed Plants			
Iron Deposits (B5) Inundation Visible on A		Thin Muck Surfac Other	æ (C7)				X Geomorphic Shallow Aqu			
indication visible on A	char magery (B7)	Other					X FAC-Neutra			
							Sphagnum N			
Water Depths (inches):				Remarks: HYDROLO	OGY PARAM	METER MET.				
Surface Water: Water Table:										
Saturated soil:										
Vegetation Parameter:										
Dominan	t Species I	Stratum	IND	%	Non Do	minant Species		Stratum	IND	%
Acer ri		Tree	FAC	25		dron tulipifera		Tree	FACU	3
Fraxinus per Pinus i		Tree Shrub	FACW FAC	10		elium scoparium us argutus		Herbaceous Herbaceous	FACW FAC	10 5
Liquidambar		Shrub	FAC	5	Solida	igo altissima		Herbaceous	FACU	5
Peltandra		Herbaceous Herbaceous	OBL	30	Sorghi	ım halepense		Herbaceous	FACU	3
Juncus e	egjusus	Herbaceous	OBL	20						
							1			
7							- 1			
	5 1 7						1			
							- 1			
0/ Di		100%				D.	ovalanas Indaw	1.0		
	species FAC or wetter:		ETLAND P	PLANT LIST			evalence Index: using all species prese	1.8	•	
Rapid Test for Hydrophyt	ic Vegetation:			Remarks: VEGETAT	ION PARAM	METER MET.	8 7 7			
	ce Test >50%: X									
	ndex is ≤ 3.0: X									
Problematic Hydrophyt	ic Vegetation:									
Soil Parameter:										
	M	atrix			Redox Fea	tures			NEW 19	
Depth (inches)	Color (Moist		%	Color (Moist)	%	Туре	Loc		Textur	
0-4 9-12	2.5Y 6/2 2.5Y 6/1		90	7.5YR 5/6 5YR 4/6	10	C	M M		NDY CLAY	
12-20	2.5 Y 6/1 2.5 Y 5/1		95	5YR 4/6 5YR 4/6	5	C	M		NDY CLAY	
Hydric Soil Indicators:										
Histosol (A1) Histic Epipedon (A2)		irie Redox (A16) icky Mineral (S1)			Surface (F6) ark Surface (F		Inc	licators for Pr	oblematic H	ydric Soils
Black Histic (A3)		eyed Matrix (S4)			ressions (F8)	9		1cm Muck	(A9)	
Hydrogen Sulfide (A4)	Sandy Re			Marl (F10)				2cm Muck		
Stratified Layers (A5)		Matrix (S6)		Depleted Oc		a commence	_	Reduced V		
Organic Bodies (A6)	Dark Surf		.0)		nese Masses ((F12)	- 1		Floodplain S	
—— 5cm Mucky Mineral (A7 Muck Presence (A8)		Below Surface (S Surface (S9)	00)	Umbric Suri			-			my Soils (F20) (F2)
1 cm Muck (A9)		ucky Mineral (F1))	Delta Ochric (F17)Red Parent Material (TF2) Reduced Vertic (F18)Very Shallow Dark Surface (TF1)						
Depleted Below Dark Su	rface (AlLoamy G	leyed Matrix (F2)		Piedmont Fl	loodplain Soil			Other		
Thick Dark Surface (A12	2) X Depleted	Matrix (F3)		Anomalous Bright Loamy Soils (F20)						
Restrictive Layer (If Obs	served)			Remarks: SOIL PAR.	AMETER M	ET.				
Type:				Menans. Soil PAR.	ER M	~ * *				
Depth (inches):										

					ERGY VIRGINIA GE COUNTIES; CITY OF HOPEWELL BINIA RE, E. SHAW 2018 WETLAND BELOW Normal Circumstances; Disturbed Parameters (see Remarks); Problematic Parameters (see Remarks); Dical Climate/Hydrology (see Remarks);			Start: 37.379681° -77.387324°				
Inundation Visible on A Water Depths (inches):	The second secon	Other	race (C7)	Remarks:	X Geomorphic Position (D2) Shallow Aquitard (D3) X FAC-Neutral Test (D5) Sphagnum Moss (D8) Remarks: HYDROLOGY PARAMETER MET.							
Surface Water Water Table Saturated soil: Vegetation Parameter:	12			Actinates.	MIDROEC		IIII.					
Dominan Liquidamban Almus se Platamus oc Liquidamban Rubus a Juncus Saururus Lonicera	r styraciflua vrulata vcidentalis r styraciflua urgutus effusus cermus	Stratum Sapling Sapling Shrub Shrub Herbaceous Herbaceous Vine	FAC FACW FACW FAC FAC OBL OBL FACU	% 25 15 10 10 20 15 15 5		Platamu Ailanth Solida Dichantheld Lespec	minant Species s occidentalis ins altissima go altissima jum clandestimi leza cuneata im halepense		Stratum Sapling Sapling Herbaceous Herbaceous Herbaceous Herbaceous	FACU FACU FACU FACU FACU FACU FACU	% 10 5 5 5 3 3	
NOTE: SPECIES INDICATE Rapid Test for Hydrophyt Dominand	ce Test >50%: X Index is ≤ 3.0: X	88% O 2016 NATIONAL	, WETLAND P	Remarks:	VEGETAT	ION PARAM		revalence Index: using all species pr		•		
Soil Parameter:	M	latrix				Redox Feat	tures					
Depth (inches) 0-8 8-20	Color (Moist 2.5Y 5/2 2.5Y 6/1		% 85 100		r (Moist) YR 5/6	% 15	Type C	Loc M	SA	Texture NDY CLAY CLAY LO	LOAM	
Hydric Soil Indicators: Histosol (A1) Coast Prairie Redox (A16) Histic Epipedon (A2) Sandy Mucky Mineral (S1) Black Histic (A3) Sandy Gleyed Matrix (S4) Stratified Layers (A5) Organic Bodies (A6) Scm Mucky Mineral (A7) Muck Presence (A8) Thin Dark Surface (S9) Communic Mucky Mineral (A7) Depleted Below Dark Surface (A1 Depleted Below Dark Surface (A1 Depleted Matrix (F2) Thick Dark Surface (A1 Depleted Matrix (F3) Restrictive Layer (If Observed)			Redox Dark Surface (F6) Depleted Dark Surface (F7) Redox Depressions (F8) Marl (F10) Depleted Ochric (F11) Iron-Manganese Masses (F12) Umbric Surface (F13) Delta Ochric (F17) Reduced Vertic (F18) Piedmont Floodplain Piedmont Floodplain Soils (F19) Anomalous Bright Loamy Soils (F20) Remarks: SOIL PARAMETER MET.					(A9) (A10) Fertic (F18) Floodplain Seright Load Material (T	oils (F19) my Soils (F20) F2)			
Type: Depth (inches):												

Sampling Point Number: 56

									•		_	
A	Project: C pplicant:			WELL 230K RGY VIRGI)	Section	on/Township/Range		N/A		
Stantec City	/County: CHESTER	FIELD AND PR	INCE GEOR	GE COUNTIES	; CITY OF HO	PEWELL		on (LRR or MLRA)		LRR P		
	State:		VIRG	INIA E, E. SHAW				Start		37.379681° -77.387324° 37.290017° -77.283916°		
Invest	Date:	Α.	7/26/				S	Terminus oil Map Unit Name		HREPTS AND		
	Dutc.		11201	2010				on map ome mane		IIII.I TO AIND	ODOLIS	
Summary of Findings:	Vegetation is Present:	x I			Normal Circ	D ABOVE		NWI Classifica	tion.	N/A		
	dric Soils are Present:			Disturbed Pa	arameters (see			Local R		CONCA	VE	
	Hydrology is Present:	X		Problematic Pa			_	Landi		DRAINAGE		
	is within a Wetland:		Atyp	pical Climate/Hydrology (see Remarks):					ne %:	4-5		
Hydrology Parameter:	Pri	mary Indicato	PC.						Secondary Indic	ators:		
	771	mary marcuro	73.						oil Cracks (B6)	<i>aiors.</i>		
Surface Water (A1)		Water Stained)		47			egetated Concav	e Surface (I	38)	
High Water Table (A2) Saturation (A3)		Aquatic Faun Marl Deposits							Patterns (B10) Lines (B16)			
Water Marks (B1)	_	Hydrogen Sul		1)					n Water Table (C	(2)		
Sediment Deposits (B2)				Living Roots	(C3)				Surrows (C8)			
— Drift Deposits (B3)		Presence of R			26)				Visible on Aeria		C9)	
Algal Mat or Crust (B4) Iron Deposits (B5)	-	Thin Muck St		Filled Soils (C	.6)			-	Stressed Plants (ic Position (D2)	DI)		
Inundation Visible on Ae		Other							quitard (D3)			
								X FAC-Neut				
Water Depths (inches):				Remarks:	HYDROLO	GV PARAN	AETER MI		Moss (D8)			
Surface Water: Water Table:				remarks.		01111111						
Saturated soil: Vegetation Parameter:												
Dominant Liquidambar		Stratum Sapling	FAC FAC	10			minant Speniella repens	cies	Stratum Herbaceous	IND FACU	5	
Platanus occ	cidentalis	Sapling	FACW	10			ercus alba		Herbaceous	FACU	3	
Ailanthus a Liquidambar		Sapling Shrub	FACU FAC	10								
Rubus ar	gutus	Herbaceous	FAC	30								
Microstegium Dichanthelium		Herbaceous Herbaceous	FAC FACW	20 15								
Smilax rotu		Vine	FAC	10								
Vitis rotur	ndifolia	Vine	FAC	5								
% Dominant s	pecies FAC or wetter:	89%						Prevalence Index:	2.9			
	OR STATUS ACCORDING T	O 2016 NATION	AL WETLAND I					ated using all species pr	esent.			
Rapid Test for Hydrophytic				Remarks:	VEGETATI	ON PARA	METER MI	ET.				
Prevalence Ir												
Problematic Hydrophytic												
C-11 D												
Soil Parameter:	N	Iatrix				Redox Fea	tures					
Depth (inches)	Color (Mois		%	Color (%	Туре	Loc		Texture		
0-6	2.5Y 5/4		100						SA	NDY CLAY	LOAM	
Hydric Soil Indicators:	G . P	· · · D · / · / ·	10		D 1 D 10	. C . (EC)					1 : 0 :1	
Histosol (A1) Histic Epipedon (A2)		iirie Redox (A ucky Mineral			Redox Dark S Depleted Dar		7)	1	ndicators for Pro	blematic H	vdric Soils	5
Black Histic (A3)		eyed Matrix (S			Redox Depres		.,		1cm Muck	(A9)		
Hydrogen Sulfide (A4)	Sandy Re				Marl (F10)				2cm Muck			
Stratified Layers (A5) Stripped Matrix (S6) Organic Bodies (A6) Dark Surface (S7)					Depleted Och Iron-Mangane					nile (F10)		
5cm Mucky Mineral (A7)		e Below Surfa	ce (S8)		Umbric Surfa		. 12)			Bright Loa		F20)
Muck Presence (A8)	Thin Dar	k Surface (S9)			Delta Ochric	(F17)			Red Parent	Material (T	F2)	
1 cm Muck (A9)		lucky Mineral			Reduced Vert		(Free)		Very Shallo	w Dark Sur	face (TF1	2)
Depleted Below Dark Sur Thick Dark Surface (A12)		leyed Matrix (Matrix (F3)	F2)		Piedmont Flo Anomalous B				Other			
Thick Dark Surface (A12)	Depleted				omatous D	gm Loanly	50113 (1 20)					
Restrictive Layer (If Obse	erved)			Remarks:	SOIL PARA	METER N	OT MET.					

Type: Depth (inches): GRAVEL

_				WELL 230KV REBUI	LD			
	Applicant: CHESTER			ERGY VIRGINIA GE COUNTIES; CITY OF	HODEWELL		Fownship/Range: LRR or MLRA):	N/A LRR P
Jantec d	State:	FIELD AND I	VIRG		HOPEWELL	Subregion (Start:	37.379681° -77.387324°
Inve		1		RE, E. SHAW			Terminus:	
	Date:		7/26/	2018		Soil	Map Unit Name:	OCHREPTS AND UDULTS
Summary of Findings:				WETL	AND AT FLA	G AMH-50.		
	ic Vegetation is Present:	X			Circumstances:		NWI Classification:	
	Hydric Soils are Present:	X		Disturbed Parameters (Local Relief	
101 101 101	nd Hydrology is Present: ea is within a Wetland:	X		Problematic Parameters (ical Climate/Hydrology (in the second		Landform: Slope %:	
Hydrology Parameter:	ca is within a vvenand.	Α	Ацр	rear Chinates Trydrology (see Remarks).		Вюре 70.	0-1
	Pri	mary Indica	tors:					ndary Indicators:
Surface Water (A1) High Water Table (A2) X Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4 Iron Deposits (B5) Inundation Visible on A	C1) Living Roots (C3) (C4) Filled Soils (C6)		Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) X Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Sphagnum Moss (D8)					
Water Depths (inches):				Remarks: HYDROL	OGY PARAM	IETER MET.		
Surface Water								
Water Table Saturated soi								
Vegetation Parameter:	. 10							
			1 100		- N B			
	r styraciflua	Stratum Sapling	IND FAC	35		ninant Species arex sp.		Stratum IND % erbaceous 5
Liriodendro	on tulipifera	Sapling	FACU	20				
	ubrum r styraciflua	Sapling Shrub	FAC FAC	15 15				
	ubrum	Shrub	FAC	5			- 1	
	ppaca	Shrub	FAC	5				
	s cernuus m vimineum	Herbaceon Herbaceon		20				
	sensibilis	Herbaceo		10				
Toxicodend	ron radicans	Vine	FAC	5				
Lonicera	japonica	Vine	FACU	5				
	t species FAC or wetter:						revalence Index:	2.8
	TOR STATUS ACCORDING	O 2016 NATIO	NAL WETLAND I		TION PARAM		using all species present.	
Rapid Test for Hydrophy Dominar	ice Test >50%: X			Remarks: VEGETA	TION PARAN	IETEK MET.		
	Index is ≤ 3.0 : X							
Problematic Hydrophy								
								·
Soil Parameter:		latrix			Redox Feat			
Depth (inches)	Color (Mois		%	Color (Moist)	%	Type	Loc	Texture
0-10	7.5YR 4/1	.,	90	7.5YR 4/6	10	С	M	CLAY LOAM
10-20	7.5YR 5/2		85	5YR 4/6	15	C	M	CLAY LOAM
Hydric Soil Indicators:	I							
Histosol (A1)	Coast Pro	irie Redox (A16)	Redox Dar	rk Surface (F6)		Indic	ators for Problematic Hydric Soils
Histic Epipedon (A2)		ucky Minera			Dark Surface (F	7)		
Black Histic (A3)		leyed Matrix			pressions (F8)			1cm Muck (A9)
Hydrogen Sulfide (A4)	Sandy Re	edox (S5)		Marl (F10))			2cm Muck (A10)
Stratified Layers (A5)	Stripped	Matrix (S6)		Depleted C	Ochric (F11)			Reduced Vertic (F18)
Organic Bodies (A6)	Dark Sur	face (S7) e Below Sur			anese Masses (F12)	_	Piedmont Floodplain Soils (F19)
5cm Mucky Mineral (A		rface (F13)			Anomalous Bright Loamy Soils (F20)			
Muck Presence (A8)		k Surface (S		— Delta Ochr			_	Red Parent Material (TF2)
1 cm Muck (A9)		lucky Miner		Reduced V		(F10)		Very Shallow Dark Surface (TF12)
Depleted Below Dark S Thick Dark Surface (Al		Heyed Matrix			Floodplain Soil: s Bright Loamy		-	Other
Inick Dark Surface (A)	Z) A Depleted	Matrix (F3)		Allomatous	s bright Loamy	30115 (1-20)		
Restrictive Layer (If Ob	served)			Remarks: SOIL PAI	RAMETER M	ET.		
Туре								
Depth (inches)								

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

CHESTERFIELD - HOPEWELL 230KV REBUILD Project: DOMINION ENERGY VIRGINIA Section/Township/Range: Applicant: N/A Stantec City/County: CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL Subregion (LRR or MLRA): LRR P State: VIRGINIA Start: 37.379681° -77.387324° Investigator(s): A. MCINTYRE, E. SHAW Terminus 37.290017° -77.283916° Date: 7/26/2018 Soil Map Unit Name: OCHREPTS AND UDULTS Summary of Findings: UPLAND ABOVE FLAG AMH-53. Hydrophytic Vegetation is Present NWI Classification Normal Circumstances: X N/A Hydric Soils are Present: Disturbed Parameters (see Remarks): Local Relief NONE Wetland Hydrology is Present: Landform Problematic Parameters (see Remarks): FLAT Sampled Area is within a Wetland: Atypical Climate/Hydrology (see Remarks) Slope % 1-2 Hydrology Parameter: Primary Indicators: Secondary Indicators: Surface Soil Cracks (B6) Surface Water (A1) Water Stained Leaves (B9) Sparsely Vegetated Concave Surface (B8) High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10) Saturation (A3) Marl Deposits (B15) Moss Trim Lines (B16) Water Marks (B1) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Crayfish Burrows (C8) Drift Deposits (B3) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) Iron Deposits (B5) Thin Muck Surface (C7) X Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) Shallow Aquitard (D3) FAC-Neutral Test (D5) Sphagnum Moss (D8) HYDROLOGY PARAMETER NOT MET. Water Depths (inches): Remarks: Surface Water: Water Table: Saturated soil: Vegetation Parameter: **Dominant Species** Stratum IND % Non-Dominant Species Stratum IND Liriodendron tulipifera Tree FACU 25 15 Liriodendron tulipifera Sapling FACU Liquidambar styraciflua Sapling FAC Liriodendron tulipifera Shrub FACU Herbaceous 20 Phytolacca americana FACIL Impatiens capensis Herbaceous FACW 20 Rubus argutus Herbaceous FAC 15 15 Lonicera japonica Vine FACU Toxicodendron radicans Vine FAC % Dominant species FAC or wetter: 44% Prevalence Index: NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST Calculated using all species present. Rapid Test for Hydrophytic Vegetation: Remarks: VEGETATION PARAMETER NOT MET. Dominance Test >50% Prevalence Index is ≤ 3.0: Problematic Hydrophytic Vegetation: Soil Parameter: Matrix Redox Features Depth (inches) Color (Moist) Color (Moist) Type Loc Texture % 7.5YR 5/3 SANDY CLAY LOAM 100 0-20 Hydric Soil Indicators Redox Dark Surface (F6) Indicators for Problematic Hydric Soils Histosol (A1) Coast Prairie Redox (A16) Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Black Histic (A3) Sandy Gleyed Matrix (S4) Redox Depressions (F8) 1cm Muck (A9) Hydrogen Sulfide (A4) Sandy Redox (S5) Marl (F10) 2cm Muck (A10) Depleted Ochric (F11) Stratified Layers (A5) Stripped Matrix (S6) Reduced Vertic (F18) Iron-Manganese Masses (F12) Piedmont Floodplain Soils (F19) Organic Bodies (A6) Dark Surface (S7) 5cm Mucky Mineral (A7) Polyvalue Below Surface (S8) Umbric Surface (F13) Anomalous Bright Loamy Soils (F20) Muck Presence (A8) Thin Dark Surface (S9) Delta Ochric (F17) Red Parent Material (TF2) 1 cm Muck (A9) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Very Shallow Dark Surface (TF12) Depleted Below Dark Surface (Al Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) Other Thick Dark Surface (A12) Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) Restrictive Layer (If Observed) SOIL PARAMETER NOT MET. Type:

Depth (inches):

Inves Summary of Findings: Hydrophyti Hydrophyti Wetlan	Applicant: //County: CHESTERI State: tilgator(s): Date: c Vegetation is Present: d Hydrology is Present: a is within a Wetland:	DOMIN TELD AND PRIN A. N	Atyp Leaves (B9) (B13) (B15)	ERGY VIRGE COUNTI	ES; CITY OF HOP	BELOW Instances: Remarks):	Subregion Soil	NWI Classifica Local Re Landf Slop Surface So Sparsely V Drainage F Moss Trim	37. 37. OC	ve Surface (7.387324° 7.283916° DUDULTS
Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on A		Presence of Re	duced Iron duction in	res on Living Roots (C3) Iron (C4) Iron (C4) In Tilled Soils (C6) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)						C9)	
Water Depths (inches): Surface Water:				Remarks:	HYDROLOG	Y PARA	METER MET	:			
Water Table: Saturated soil:	13 O										
Vegetation Parameter:	0										
Dominan Robinia pse Quercu Pinus s Liquidambar Juncus s Parthenocissus Lonicera j Smilax rot	udoacacia s alba aeda styraciflua effusus quinquefolia aponica	Stratum Tree Tree Shrub Shrub Herbaceous Vine Vine	IND UPL FACU FAC FAC OBL FACU FACU FACU	Non-Dominant Species			m	Stratum Herbaceous Herbaceous Herbaceous Herbaceous Herbaceous	FACW FACU FACU FAC FACU	% 10 10 10 10 10 5	
NOTE: SPECIES INDICAT Rapid Test for Hydrophyti Dominance	e Test >50%: ndex is ≤ 3.0: X	50% D 2016 NATIONAL	WETLAND I	PLANT LIST Remarks:	VEGETATIO	N PARAI	Calculate	Prevalence Index: d using all species pro		-	
Soil Parameter:											
Depth (inches)	Color (Moist	atrix	%	Colo	r (Moist)	Redox Fea %	tures Type	Loc		Textur	
0-6	2.5Y 5/2		90	10	YR 6/6	10	С	M		CLAY LO	AM
6-20	7.5YR 5/1		80	10	YR 6/6	20	С	M		CLAY LO	AM
Hydric Soil Indicators: Histosol (A1) Coast Prairie Redox (A16) Histic Epipedon (A2) Sandy Mucky Mineral (S1) Black Histic (A3) Sandy Gleyed Matrix (S4) Hydrogen Sulfide (A4) Sandy Redox (S5) Stratified Layers (A5) Stripped Matrix (S6) Organic Bodies (A6) Dark Surface (S7) Sem Mucky Mineral (A7) Polyvalue Below Surface (S8) Muck Presence (A8) Thin Dark Surface (S9) 1 cm Muck (A9) Loamy Mucky Mineral (F1) Depleted Below Dark Surface (A1 Loamy Gleyed Matrix (F2) Thick Dark Surface (A12) X Depleted Matrix (F3)					Redox Dark Surface (F6) Depleted Dark Surface (F7) Redox Depressions (F8) Marl (F10) Depleted Ochric (F11) Iron-Manganese Masses (F12) Umbric Surface (F13) Delta Ochric (F17) Reduced Vertic (F18) Piedmont Floodplain Soils (F19) Anomalous Bright Loamy Soils (F20)				Indicators for Problematic Hydric Soils lcm Muck (A9)2cm Muck (A10)Reduced Vertic (F18)Piedmont Floodplain Soils (F19)Anomalous Bright Loamy Soils (F20)Red Parent Material (TF2)Very Shallow Dark Surface (TF12)Other		
Restrictive Layer (If Observed) Type: Depth (inches):	erved)			Remarks:	SOIL PARAM	IETER M	ЕТ.				

_			PEWELL 230KV REBUI	ILD					
Stantec	Applicant:City/County: CHESTER		NERGY VIRGINIA	HOPEWELL	Section/Townsh Subregion (LRR or		N/A LRR P		
Stantee	State:		GINIA	HOLLWELL	Subregion (ERR of	Start:	37.379681° -77.387.	324°	
1	investigator(s):	A. MCINTY	TRE, E. SHAW			Terminus:	37.290017° -77.283		
	Date:	7/2	6/2018		Soil Map U	nit Name:	OCHREPTS AND UDU	JLTS	
Summary of Findings:			UP	LAND ABOVE	AMI-5.				
	phytic Vegetation is Present:		Normal (Circumstances:	X NWI	Classification:	N/A		
	Hydric Soils are Present:		Disturbed Parameters	_		Local Relief:	CONVEX		
	etland Hydrology is Present:		Problematic Parameters	n	_	Landform:	SLOPE		
Hydrology Parameter:	l Area is within a Wetland:	At	ypical Climate/Hydrology	(see Remarks):		Slope %:	2-4		
Trydrology Farameter.	Pri	mary Indicators:				Secondar	ry Indicators:		
					s	Surface Soil Cracks			
Surface Water (A1)		Water Stained Leaves (F	39)				Concave Surface (B8)		
High Water Table (Saturation (A3)	A2)	Aquatic Fauna (B13) Marl Deposits (B15)				Orainage Patterns (I Moss Trim Lines (E			
Water Marks (B1)	_	Hydrogen Sulfide Odor	(C1)			Ory-Season Water			
Sediment Deposits	(B2)	Oxidized Rhizospheres			c	Crayfish Burrows (C8)		
Drift Deposits (B3)	San	Presence of Reduced Iro		1			on Aerial Imagery (C9)		
Algal Mat or Crust Iron Deposits (B5)	(B4)	Recent Iron Reduction in Thin Muck Surface (C7)				Stunted or Stressed Geomorphic Position			
	on Aerial Imagery (B7)	Other				Shallow Aquitard (I			
Contraction of the Contraction o					F	AC-Neutral Test (D5)		
Water David Co. 1			Damester verme or	LOCY BAR 13		phagnum Moss (D	(8)		
Water Depths (inches): Surface W	/ater		Remarks: HYDROI	LOGY PARAM	ETER NOT MET.				
	able:								
Saturated	2								
Vegetation Parameter:									
Dom	inant Species	Stratum IND	%	Non-Don	inant Species	Stra	tum IND %	6	
P	inus taeda	Shrub FAC	5	Pin	us taeda	Herba	ceous FAC 10	0	
	bus argutus edeza cuneata	Herbaceous FAC Herbaceous FACL	J 20 J 15		go altissima ella repens	Herba Herba			
	cera japonica	Vine FACU			a sanguinalis	Herba			
						- 1			
% Domi	nant species FAC or wetter:	50%	Prevalence Index: 3.5						
	DICATOR STATUS ACCORDING		D PLANT LIST		Calculated using al	-			
Rapid Test for Hydro	phytic Vegetation:		Remarks: VEGETA	TION PARAM	ETER NOT MET.				
	inance Test >50%:								
	nce Index is ≤ 3.0:								
Problematic Hydro	ophytic Vegetation:								
Soil Parameter:									
	N	1atrix		Redox Feat	ires		· · · · · · · · · · · · · · · · · · ·	15 (2)	
Depth (inches)	Color (Mois		Color (Moist)	%	Туре	Loc	Texture		
0-8 8-20	2.5Y 5/4 2.5Y 6/4	100					SANDY CLAY LO		
0-20	2.51 0/4	100		1			J.H.D. CLATEO		
Hydric Soil Indicators:	G . P	11 B 1 (110)	p.1. p.	1.6.6.(50)		1. 1:	s for Problematic Hydric	0.4	
Histosol (A1) Histic Epipedon (A2		airie Redox (A16) lucky Mineral (S1)		rk Surface (F6) Dark Surface (F7)	n	maicators	for Problematic Hyaric	: Solls	
Black Histic (A3)		leyed Matrix (S4)		pressions (F8)		1cn	n Muck (A9)		
Hydrogen Sulfide (A4) Sandy R	edox (S5)	Marl (F10				n Muck (A10)		
Stratified Layers (A		Matrix (S6)		Ochric (F11)	110)		duced Vertic (F18)	(F10)	
Organic Bodies (A6 5cm Mucky Minera		face (S7) e Below Surface (S8)		ganese Masses (F urface (F13)	12)		dmont Floodplain Soils (omalous Bright Loamy S		
Muck Presence (A8		k Surface (S9)	Delta Och				d Parent Material (TF2)	.0.13 (1 20)	
1 cm Muck (A9)		lucky Mineral (F1)		Vertic (F18)		Ver	ry Shallow Dark Surface	(TF12)	
Depleted Below Da		Gleyed Matrix (F2)		Floodplain Soils	and the same of th	Oth	er		
Thick Dark Surface	(A12)Depleted	Matrix (F3)	Anomalou	is Bright Loamy	Soils (F20)				
Restrictive Layer (I)	f Observed)		Remarks: SOIL PA	RAMETER NO	T MET.				
	ype:		The state of the s						
Depth (inc									

CHESTERFIELD - HOPEWELL 230KV REBUILD

Sa

	Attachment 2.D.1									
]	Page 10	8 of	110							
ampling P	oint Nu	mber:	61							
	N/A									
37.	LRR I 379681° -77		0							
37.	290017° -77	.283916	0							
OC	HREPTS AND	UDULTS								
ef:	N/A CONCA	VE								
	DRAINAGE									
%:	1-2									
condary Indic	ators:									
Cracks (B6)										
getated Concav terns (B10)	e Surface (I	38)								
ines (B16)										
Water Table (C rows (C8)	(2)									
isible on Aeria		C9)								
ressed Plants (Position (D2)	D1)									
itard (D3)										
Test (D5)										
loss (D8)										
Stratum	IND	%								
Herbaceous Herbaceous	FAC FACU	15 10								
Herbaceous	FACU	5								
3.6										
nt.										
-		G TO								
ALC: NO	Textur									
	CLAY LO									

Stantec City/	County: CHESTERS	DOM:	INION ENE	GE COUNTI	GINIA	WELL		ownship/Range LRR or MLRA		N/A LRR	
Jeannee Chy	State:		VIRC	GINIA		WELL	Subregion (Star		.379681° -7	
Investig	gator(s):	A.	MCINTY		W			Terminus		.290017° -7	
	Date:		7/26/	2018			Soil	Map Unit Name	. 00	CHREPTS ANI	D UDULTS
nary of Findings:				UPLAND I	N SWALE BETW	EEN TO	WERS 211/13	3 AND 211/14.			
	Vegetation is Present:	X			Normal Circum	_	X	NWI Classific		N/A	
	dric Soils are Present:				Parameters (see Re			Local F		CONCA	
	Hydrology is Present: is within a Wetland:				Parameters (see Re Hydrology (see Re				form: pe %:	DRAINAGI 1-2	EWAY
logy Parameter:	is within a wettand.		Atyp	icai Ciinate	arrydrology (see Ke	ciliai KS).		310	pe 70.	1-2	
OV.	Prin	nary Indicato	rs:						Secondary Indi	cators:	
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aer		Water Stainer Aquatic Faun Marl Deposit Hydrogen Su Oxidized Rhi Presence of R Recent Iron F Thin Muck St Other	a (B13) s (B15) Ifide Odor (C zospheres on teduced Iron teduction in	C1) a Living Roo (C4)				Sparsely Drainage Moss Trir Dry-Sease Crayfish I Saturation Stunted of X Geomorph Shallow A	oil Cracks (B6) Vegetated Conca Patterns (B10) In Lines (B16) In Water Table (Burrows (C8) I Visible on Aeria Stressed Plants Inic Position (D2) Aquitard (D3) Itral Test (D5)	C2) al Imagery ((D1)	
									n Moss (D8)		
surface Water:				Remarks:	HYDROLOGY	PARAM	ETER NOT	мет.			
Saturated soil:											
Dominant S		Stratum	IND	0%			ninant Species		Stratum	IND	%
Pinus ta Liriodendron Pinus ta Lespedeza c Rubus arg	tulipifera eda cuneata	Sapling Sapling Shrub Herbaceous Herbaceous		3 3 65 25		Achilled	is arindinacei millefolium ca americana	IS.	Herbaceous Herbaceous Herbaceous	FAC FACU FACU	15 10 5
NOTE: SPECIES INDICATO	Vegetation:X dex is ≤ 3.0:	60% D 2016 NATION.	AL WETLAND	PLANT LIST Remarks:	VEGETATION	PARAM	Calculated	revalence Index using all species p			
arameter:											
Control of the second	M	atrix		Т	Re	dox Feat	ures			1 1 2 1	The state of
Depth (inches)	Color (Moist)	%	Colo	or (Moist)	%	Type	Loc		Textur	
0-20	7.5YR 5/6		100			_				CLAY LO	DAM
dric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) 5cm Mucky Mineral (A7) Muck Presence (A8) 1 cm Muck (A9) Depleted Below Dark Surf	Sandy Mt Sandy Gle Sandy Re Saripped N Dark Surf Polyvalue Thin Dark Loamy M face (Al Loamy Gle	Matrix (S6)	(S1) S4) ce (S8)		Redox Dark Surf Depleted Dark Sur Redox Depressio Marl (F10) Depleted Ochric Iron-Manganese Umbric Surface (Delta Ochric (F1 Reduced Vertic (Piedmont Floodp Anomalous Bright	urface (F7) nns (F8) (F11) Masses (F7) (F13) (F18) Idain Soils	F12) (F19)		Piedmont I Anomalous Red Parent	(A9) (A10) Vertic (F18) Floodplain S s Bright Loa t Material (T	Soils (F19) amy Soils (F2
Restrictive Layer (If Obser	rved)			Remarks:	SOIL PARAME	TER NO	T MET				
Restrictive Layer (If Obserting) Type:	veu)			Kemarks:	SOIL PARAME	I ER NU	I MEI.				
Depth (inches):											

			PEWELL 230KV REBUIL	_D	2				
	Applicant:		NERGY VIRGINIA	IOPEWELL	Section/Township/Range: Subregion (LRR or MLRA):				
O Starred	State:		GINIA	OLLHED	Start:				
Inves	tigator(s):		YRE, E. SHAW		Terminus:				
	Date:	7/20	6/2018		Soil Map Unit Name:	: LUCY-ORANGEBURG LOAMY SANDS			
Summary of Findings:			WETLAN	D BELOW FI	LAC AMK-5				
	c Vegetation is Present:	x		ircumstances:		ation: N/A			
	Iydric Soils are Present:	X	Disturbed Parameters (s	- Andrews Thursday	Local Re				
	d Hydrology is Present:	X	Problematic Parameters (s	_	Landf				
	ea is within a Wetland:	X Aty	ypical Climate/Hydrology (s	ee Remarks):	Slop	pe %: 1-2			
Hydrology Parameter:									
	Primary	y Indicators:				Secondary Indicators:			
X Surface Water (A1) High Water Table (A2) X Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on A	Aqu Mar Hyc Oxi Pres Rec Thir	sence of Reduced Iro ent Iron Reduction in m Muck Surface (C7)	(C1) on Living Roots (C3) on (C4) n Tilled Soils (C6)		Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) X Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Sphagnum Moss (D8)				
Water Depths (inches):			Remarks: HYDROLO	OGY PARAM		NIOSS (Do)			
Surface Water:	1		Kenning.	JG	DI Day				
Water Table:									
Saturated soil:	: 0								
Vegetation Parameter:									
Dominan		Stratum IND	%	Non-Don	ninant Species	Stratum IND %			
Albizia ju	dibrissin	Sapling UPL	10		s cyperinus	Herbaceous OBL 15			
Apocynum c Persicaria		erbaceous FACU erbaceous OBL							
Rubus a		erbaceous FAC	20 20						
Smilax rot	tundifolia	Vine FAC	10						
Lonicera	japonica	Vine FACU	J 10						
	-								
		Market agr							
	species FAC or wetter:	50%	100		Prevalence Index:				
	FOR STATUS ACCORDING TO 20	16 NATIONAL WETLANI		TION PARAM	Calculated using all species pro	esent.			
Rapid Test for Hydrophyt Dominance	ce Test >50%:		Remarks: VEGETAL	ION PARAM	ETER MET.				
	Index is ≤ 3.0: X								
Problematic Hydrophyt									
Soil Parameter:									
A STATE OF THE STA	Matri			Redox Featu	Total Control of the	《公司》(公司)			
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Type Loc	Texture			
0-6 6-20	10YR 4/1 10YR 6/8	90	7.5YR 5/6 7.5YR 4/6	10	C M	CLAY LOAM CLAY			
0-20	1011078	90	7.31K 4/0	+ 10	C M	CLAT			
Hydric Soil Indicators:									
Histosol (A1)	Coast Prairie			Surface (F6)		Indicators for Problematic Hydric Soils			
Histic Epipedon (A2)		Mineral (S1)		ark Surface (F7)				
Black Histic (A3)	Sandy Gleyed			ressions (F8)		lcm Muck (A9)			
Hydrogen Sulfide (A4)	Sandy Redox		Marl (F10)	(211)		2cm Muck (A10)			
Stratified Layers (A5)	Stripped Matr Dark Surface		Depleted O	chric (F11) nese Masses (F	212)	Reduced Vertic (F18)			
Organic Bodies (A6)			Umbric Sur		112)	Piedmont Floodplain Soils (F19)			
5cm Mucky Mineral (A7 Muck Presence (A8)	Thin Dark Su	low Surface (S8)	Delta Ochri			Anomalous Bright Loamy Soils (F20) Red Parent Material (TF2)			
1 cm Muck (A9)		y Mineral (F1)	Reduced Ve			Very Shallow Dark Surface (TF12)			
Depleted Below Dark Su				loodplain Soils	(F19)	Other			
Thick Dark Surface (A12				Bright Loamy					
					, ,				
Restrictive Layer (If Obs	erved)		Remarks: SOIL PAR	AMETER ME	ET.				
Type:									

Stantec Appli City/Co Investigate Summary of Findings: Hydrophytic Ve Hydri Wetland Hy	cant: CHESTERFIELD AND state: or(s): Date: getation is Present: X Soils are Present: drology is Present: within a Wetland: Primary Indic	MINION ENER PRINCE GEORGE VIRGIN A. MCINTYRE 7/26/20 Pr Atypic	COUNTIES; CITY OF HO NIA , E. SHAW 118 UPLAND BETWEI	EN TOWERS cumstances: 12 te Remarks): e Remarks):	211/17 AND 211/18. X NWI Classific Local I Lanc Slo Surface S): 37. s: 37. e: LUCY-Of	
High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial	Aquatic Fi Marl Depc Hydrogen Oxidized I Presence c Recent Iro Thin Mucl	auna (B13) ssits (B15) Sulfide Odor (C1) Rhizospheres on L of Reduced Iron (C on Reduction in Ti k Surface (C7)	iving Roots (C3) ('4) (lled Soils (C6)	GY PARAME	Drainage Moss Tri Dry-Seas Crayfish Saturation Stunted o Geomorp Shallow	Patterns (B10) m Lines (B16) on Water Table (i Burrows (C8) n Visible on Aeria or Stressed Plants thic Position (D2) Aquitard (D3) attral Test (D5) m Moss (D8)	C2) al Imagery (C9) (D1)
Surface Water: Water Table:							
Saturated soil: Vegetation Parameter:							
Dominant Sp Quercus rub Pinus taede Lespedeza cun Rubus argut Schedonorus arum Lonicera japo Toxicodendron ru	ra Shrub s Shrub eata Herbace us Herbace linaceus Herbace uica Vine	FACU FAC ous FACU ous FAC ous FAC ous FAC FACU	10 5 30 20 15 15 3	Mitchel	nant Species lla repens millefolium	Stratum Herbaceous Herbaceous	IND % FACU 5 FACU 5
% Dominant spec	ies FAC or wetter: 57%				Prevalence Index	x: 3.6	
NOTE: SPECIES INDICATORS Rapid Test for Hydrophytic V. Dominance Te Prevalence Index Problematic Hydrophytic Ve Soil Parameter:	st >50%: X . is ≤ 3.0: egetation:			ION PARAMI		resent.	
Depth (inches)	Matrix Color (Moist)	%	Color (Moist)	Redox Featur	Type Loc	25.56.00	Texture
0-20	10YR 5/6	100					CLAY LOAM
Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) 5cm Mucky Mineral (A7) Muck Presence (A8) 1 cm Muck (A9) Depleted Below Dark Surface Thick Dark Surface (A12)	Depleted Matrix (F3	ral (S1) ix (S4)) irface (S8) S9) eral (F1) ix (F2)	Redox Depre Marl (F10) Depleted Ocl Iron-Mangan Umbric Surft Delta Ochric Reduced Ver Piedmont Flc Anomalous E	rk Surface (F7) essions (F8) thric (F11) esse Masses (F1 ace (F13) (F17) ttic (F18) codplain Soils (Bright Loamy S	(F19) (oils (F20)	1 cm Muck 2 cm Muck Reduced V Piedmont Anomalou Red Paren	
Restrictive Layer (If Observe Type: Depth (inches):	d)	. I	Remarks: SOIL PARA	AMETER NOT	Г МЕТ.		



Stantec Consulting Services Inc.

1011 Boulder Springs Drive Suite 225, Richmond VA 23225-4951

December 13, 2019 File: 203401247

Attention: Regulator of the Day

U.S. Army Corps of Engineers

803 Front Street Norfolk Virginia 23510

Via Email: CENAO.REG_ROD@usace.army.mil

Reference: Request for Approved Jurisdictional Determination

Chesterfield-Tyler 230 kV Lines #205 and #2003 Transmission Line Rebuild

Chesterfield County, VA

Start: Latitude: 37.344777° Longitude: -77.395761° Terminus: Latitude: 37.342071° Longitude: -77.395847°

Applicant: Ms.

Ms. Lane Carr

Virginia Electric and Power Company

10900 Nuckols Road Glen Allen, Virginia 23060

Dear Regulator of the Day:

Stantec Consulting Services, Inc. (Stantec) has been retained by Virginia Electric and Power Company, doing business as Dominion Energy Virginia to conduct a detailed investigation of waters of the U.S. (WOUS), including wetlands, on the above-referenced project. The approximate 3.43-acre site is located within the James River drainage basin in Chesterfield County, Virginia (Figure 1). The site is situated within an existing right-of-way (ROW) on the north side of Old Bermuda Hundred Road (Rt. 618) and extends approximately 0.19 miles to the north. The site is just east of the intersection of Old Bermuda Hundred Road and Old Stage Road (Rt. 732) and can be accessed directly from Old Bermuda Hundred Road (Figure 2). A copy of the Pre-Application and/or Jurisdictional Waters Determination Request Form is provided in Appendix A.

Off-site Evaluation

Prior to conducting fieldwork, Stantec consulted the U.S. Geological Survey (USGS) 7.5-minute Topographical Quadrangle Maps for Chester, Virginia (1994 revision) and Hopewell, Virginia (1996 revision), the National Wetlands Inventory Interactive Mapper (NWI), administered by the U.S. Fish and Wildlife Service (USFWS), the SSURGO Soils Survey, administered by the Natural Resources Conservation Service (NRCS), and flood plain maps available at the Flood Map Service Center, administered by the Federal Emergency Management Agency (FEMA). The USGS quad map shows the study area lies within an existing transmission ROW with gentle to moderately-sloping terrain and depicts no perennial or intermittent stream channels. The NWI map (Figure 3) depicts no wetland features within the property boundaries. The soil survey (Figure 4) indicates that the site is underlain primarily by Lucy-Orangeburg loamy sands, Faceville-Gritney gravelly fine sandy loams, and Rumford loamy fine sand, none of which are listed by the NRCS as hydric in Chesterfield County, Virginia. Additionally, the flood plain map (Figure 5) shows the subject property lies outside of the 100-year floodplain (Zone X).



December 13, 2019 Regulator of the Day Page 2 of 2

Reference: Chesterfield-Tyler 230 kV Lines #205 and #2003 Transmission Line Rebuild

On-site Evaluation

Fieldwork was conducted during March 2019 using the Routine Determination Method as outlined in the 1987 *Corps of Engineers Wetland Delineation Manual* and methods described in the 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0).* No WOUS or wetlands were identified within the project boundaries. The data sheets (Appendix B) used in this investigation are attached along with the Delineation Map (Figure 6), which depicts the data point and representative photo locations. Representative site photos are included in Appendix C.

Site Description

No jurisdictional features were identified by Stantec within the project limits. An approved jurisdictional determination form has been included in Appendix D. On behalf of our client, Stantec respectfully requests that the Corps confirm our delineation. We would appreciate the opportunity to meet with you on site to present our fieldwork. Please call to set up a meeting date or to discuss any questions regarding our investigation.

Thank you for your cooperation in this matter.

Regards,

Stantec Consulting Services Inc.

Sean Wender, PWD Senior Ecologist Phone: (804) 317-8027

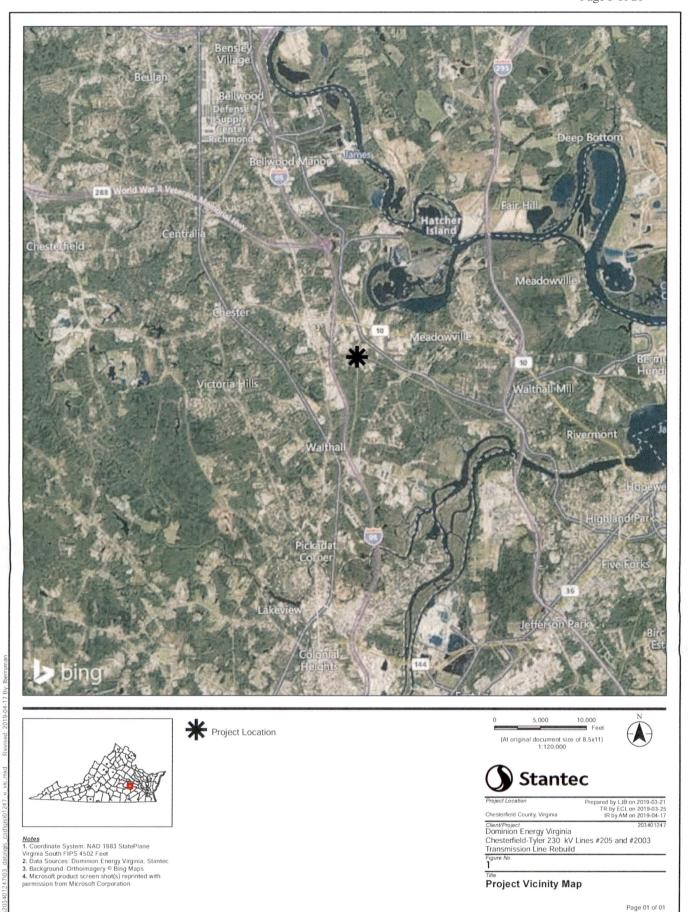
Fax: (804) 267-3470 sean.wender@stantec.com

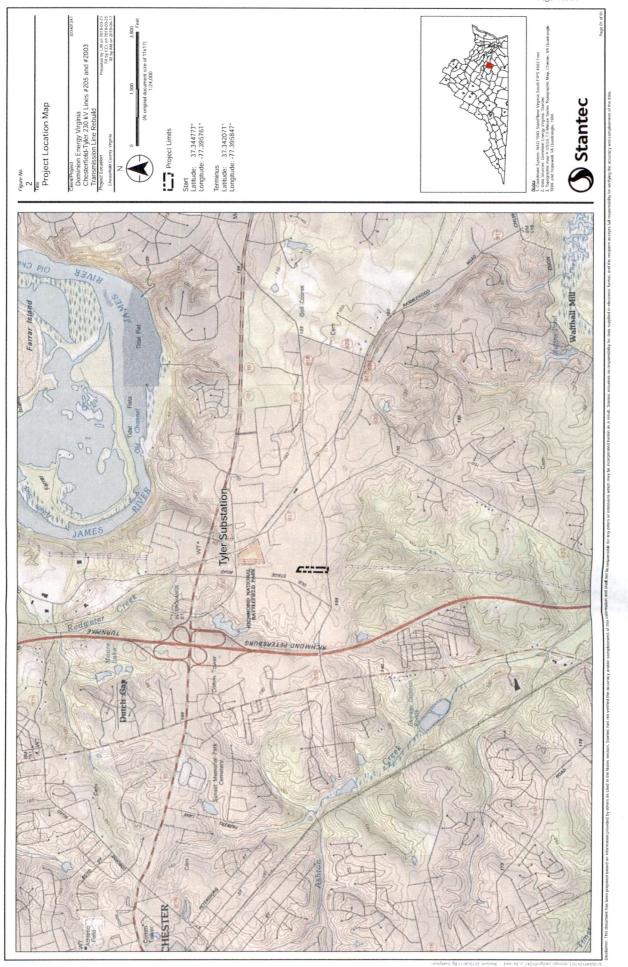
Enclosures: Figures 1, 2, 3, 4, 5, 6

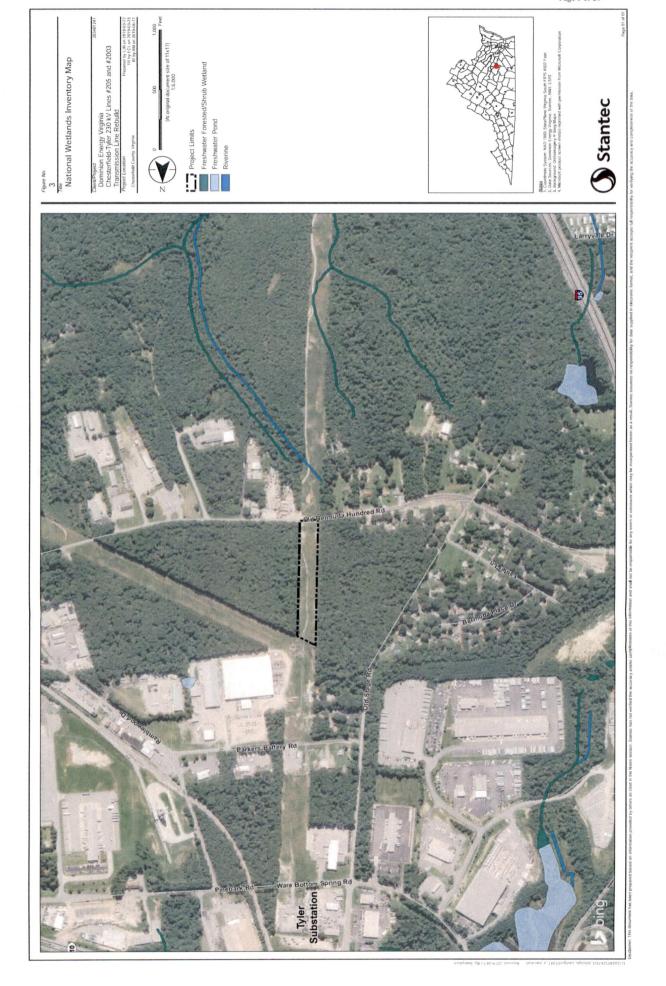
Appendices A, B, C, D

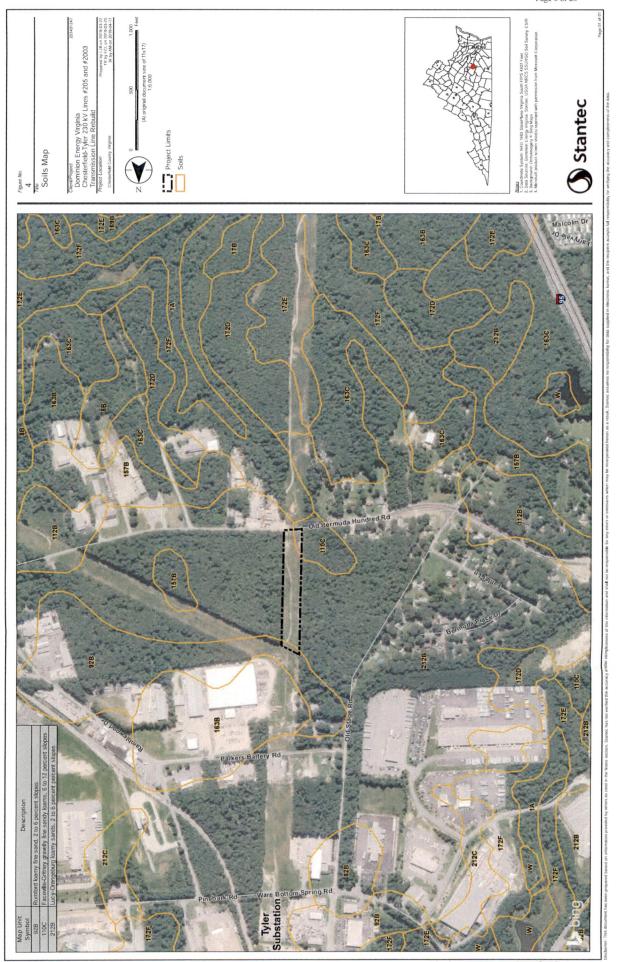
cc. Ms. Lane Carr, Virginia Electric and Power Company

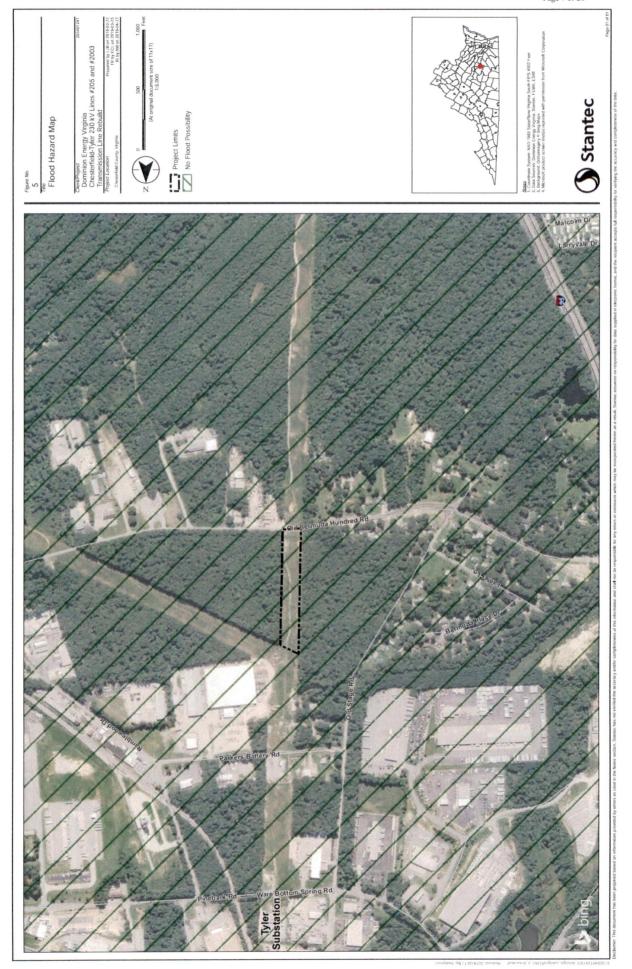
 $sk $$ \space{2.20} $$ sk $$ \space{2.20} $$ ata$ field \ecology \space{2.20} $$ ata$ field \ecology$













APPENDIX A PRE-APPLICATION AND JURISDICTIONAL DETERMINATION REQUEST FORM



NORFOLK DISTRICT REGULATORY OFFICE PRE-APPLICATION AND/OR JURISDICTIONAL WATERS DETERMINATION REQUEST FORM

This form is used when you want to determine if areas on your property fall under regulatory requirements of the U.S. Army Corps of Engineers (USACE). Please supply the following information and supporting documents described below. This form can be filled out online and/or printed and then mailed, faxed, or emailed to the Norfolk District. Submitting this request authorizes the US Army Corps of Engineers to field inspect the property site, if necessary, to help in the determination process. THIS FORM MUST BE SIGNED BY THE PROPERTY OWNER TO BE CONSIDERED A FORMAL REQUEST.

The printed form and supporting documents should be mailed to:

U.S. Army Corps of Engineers, Norfolk District Regulatory Office 803 Front Street Norfolk, Virginia 23510-1096

Or faxed to (757) 201-7678

Or sent via e-mail to: CENAO.REG ROD@usace.army.mil

Additional information on the Regulatory Program is available on our website at: http://www.nao.usace.army.mil/ Please contact us at 757-201-7652 if you need any assistance with filling out this form.

Location and Information about Property to be subject to a Jurisdictional Determination:

- 1. Date of Request: December 2019
- 2. Project Name: Chesterfield-Tyler 230 kV Lines #205 and #2003 Transmission Line Rebuild
- 3. City or County where property located: Chesterfield County, Virginia
- 4. Address of property and directions (attach a map of the property location and a copy of the property plat): The project area originates on the north side of Old Bermuda Hundred Road (Rt. 618) and extends approximately 0.19 miles to the north. The site is just east of the intersection of Old Bermuda Hundred Road and Old Stage Road (Rt. 732) and can be accessed directly from Old Bermuda Hundred Road. Location and Vicinity maps are included in the submittal package.

5. Coordinates of property (if known): **Start:**

37.344777° -77.395761°

Terminus:

37.342071° -77.395847°

- 6. Size of property in acres: 3.43 acres
- 7. Tax Parcel Number / GPIN (if available):
- 8. Name of Nearest Waterway: Redwater Creek and the James River.

		f Proposed Activity, Reason for Determination Request: Transn	Preapplication Request, and/or Reason nission Line Rebuild Project.	for					
		ineation/determination been co	ompleted by a consultant or the Corps NOWN,	on the					
	If yes, please provide t	the name of the consultant and/o	or Corps staff and Corps permit number	, if available:					
	Property Owner Con	tact Information:							
	Property Owner Name Mailing Address: City: State: Zip: Daytime Telephone: E-mail Address:	et.							
	If the person requesting Requestor's contact in		ion is NOT the Property Owner, please	also supply the					
	Requestor Name: Mailing Address: City: State: Zip: Daytime Telephone: E-mail Address:	Ms. Lane Carr – Virginia El 10900 Nuckols Road Glen Allen, Virginia 23060 804-771-4061 Lane.E.Carr@dominionener							
			ation, please include it with your reques y, topographic survey, and/or site photo						
	CERTIFICATION: I am hereby requesting a preapplication consultation or jurisdictional waters and/or wetlands determination from the U.S. Army Corps of Engineers, for the property(ies) I have described herein. I agree to allow the duly authorized representatives of the Norfolk District Corps of Engineers and other regulatory or advisory agencies to enter upon the premises of the project site at reasonable times to evaluate inspect and photograph site conditions. This consent to enter the property is superior to, takes precedence over, and waives any communication to the contrary. For example, if the property is posted as "no trespassing" this consent specifically supercedes and waives that prohibition and grants permission to enter the property despite such posting. I hereby certify that the information contained in the Request for a Jurisdictional Determination is accurate and complete:								
6	Xm Cu Requestor's Signature		12 - 16 - 19 Date						

APPENDIX B WETLAND DETERMINATION DATA FORMS

Sampling Point Number: AM-1

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Stantec cit	Project: CHESTERFIE Applicant: y/County: State: stigator(s):	DOMINION ENE CHESTERFIE VIRO	LD COUNTY GINIA		Section/Township/Range Subregion (LRR or MLRA) Site Latitude Site Longitude): MLRA 133A OF LRRP e: 37,344777°		
	2019		Soil Map Unit Name	LUCY-ORANGEBURG LOAMY SANDS				
F	ic Vegetation is Present: Hydric Soils are Present: Id Hydrology is Present:	X	UPLAND SOU Normal Cir Disturbed Parameters (se Problematic Parameters (se	cumstances: X	NWI Classifica Local R	ation: N/A lelief: NONE form: FLAT		
Sampled Are	ea is within a Wetland:		ical Climate/Hydrology (se			pe %: 0-1		
Hydrology Parameter:	Primary	Indicators:				Secondary Indicators:		
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on A	Wate	er Stained Leaves (BS attic Fauna (B13) Deposits (B15) rogen Sulfide Odor (G Lized Rhizospheres or ence of Reduced Iron ent Iron Reduction in Muck Surface (C7)	C1) n Living Roots (C3) (C4) Tilled Soils (C6)		Sparsely Drainage Moss Trir Dry-Sease Crayfish I Saturation Stunted or Geomorph Shallow A FAC-Neu Sphagnun	oil Cracks (B6) Vegetated Concave Surface (B8) Patterns (B10) In Lines (B16) In Water Table (C2) Burrows (C8) It Visible on Aerial Imagery (C9) Stressed Plants (D1) Inie Position (D2) Aquitard (D3) Ital Test (D5) In Moss (D8)		
Water Depths (inches): Surface Water			Remarks: HYDROLO	GY PARAMET	FER NOT MET.			
Water Table	:							
Saturated soil Vegetation Parameter:								
Pinus Acer r Eupatorium Rubus c Andropogo Dichamheliu Lonicera Smilax b	tratum IND Shrub FAC Shrub FAC Traceous FAC Traceous FAC Vine FACW Vine FACW FAC Vine FACW FAC FACW FACW FACW FACW FACW FACW F		Non-Domin Schedonorus c Pinus Stellaria Allium v	arundinaceus taeda vineale vineale Prevalence Index Calculated using all species p				
Soil Parameter:								
	Matrix			Redox Feature				
Depth (inches) 0-10	Color (Moist) 2.5Y 4/3	100	Color (Moist)	%	Type Loc	Texture SANDY CLAY LOAM		
10-20	2.5Y 5/4	100				SANDY LOAM		
Hydric Soil Indicators:								
Histosol (A1) Histosol (A1) Histosol (A2) Black Histic (A3) Hydrogen Sulfide (A4) Sandy Mucky Mineral (S1) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stratified Layers (A5) Organic Bodies (A6) Scm Mucky Mineral (A7) Muck Presence (A8) I cm Muck (A9) Depleted Below Dark Surface (A1 Thick Dark Surface (A12) Depleted Matrix (F3)			Redox Depre Marl (F10) Depleted Oc Iron-Mangan Umbric Surfi Delta Ochric Reduced Ver	rk Surface (F7) essions (F8) hric (F11) esse Masses (F12) ace (F13) (F17)	2)	Indicators for Problematic Hydric Soils 1cm Muck (A9) 2cm Muck (A10) Reduced Vertic (F18) Piedmont Floodplain Soils (F19) Anomalous Bright Loamy Soils (F20) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other		
Restrictive Layer (If Ob.	served)		Remarks: SOIL PARA	METER NOT	MET.			
Type: Depth (inches):								

Sampling Point Number: AM-2

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Inves Summary of Findings: Hydrophyti H Wetlan	Applicant: y/County: State: tigator(s): Date: c Vegetation is Present: fydric Soils are Present: d Hydrology is Present: a is within a Wetland:	X mary Indica Water Stain Aquatic Fat Marl Depos Hydrogen S Oxidized R Presence of	Atyp Attyp tors: ded Leaves (B9) and (B13)	ERGY VIR LD COUN INIA NTYRE 2019 U Disturbed Problematic ical Climate (C1) L Living Roc (C4)	GINIA TY JPLAND WE: Normal Ci Parameters (se Parameters (se) /Hydrology (se)	ST OF STRU rcumstances: ee Remarks): ee Remarks):	Subregion (Soil UCTURE 205/ X	Site Longitude: Map Unit Name: 19A NWI Classifica Local Re Landfi Slop Surface So Sparsely V Drainage F Moss Trim Dry-Season Crayfish B Saturation	LUCY-ORA	N/A NONN FLAT 0-1 vators: ve Surface (777° 61° G LOAMY SAN E T	DS
Iron Deposits (B5) Inundation Visible on A Water Depths (inches): Surface Water: Water Table	erial Imagery (B7)	Thin Muck Other	Surface (C7)	Remarks:	HYDROLO	OGY PARAN	METER NOT	Shallow Ad FAC-Neutr Sphagnum	ic Position (D2) quitard (D3) ral Test (D5) Moss (D8)			
Water Table: Saturated soil:												
Vegetation Parameter:												
Dominant Species Stratum			FAC FAC IS FAC IS FAC FACU FACU	25 Que Solida 25 Andropp 20 Pi 20 Alli 10			ominant Species Stra vercus rubra Shr dago altissima Herba logon virginicus Herba liium vineale Herba Prevalence Index: Calculated using all species present. XMETER MET.			FACU 5 pus FACU 10 pus FAC 10 pus FAC 5		
	ce Test >50%: X ndex is ≤ 3.0:											
Problematic Hydrophyti												
Soil Parameter:		a de unitera				D.J. P.			TO SECURE	Krall Carrie		
Depth (inches)	Color (Moist	atrix	%	Colo	r (Moist)	Redox Feat	Type	Loc	on Englished	Textur	e	
0-4	10YR 5/3		100	23.0			71-			SANDY L		
4-13	10YR 6/6		100							SANDY LO		
13-20	7.5YR 6/8		100						SA	NDY CLAY	LUAM	_
												_
Hydric Soil Indicators:										·		
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) Sem Mucky Mineral (A7) Muck Presence (A8) I cm Muck (A9) Depleted Below Dark Surface (A1 Depleted Matrix (F2) Thick Dark Surface (A12) Coast Prairie Redox (A16) Sandy Mucky Mineral (S1) Sandy Micky Medrav (S4) Stripped Matrix (S6) Dark Surface (S7) Polyvalue Below Surface (S8) Thin Dark Surface (S9) Loamy Mucky Mineral (F1) Depleted Matrix (F2) Depleted Matrix (F3)				Redox Dark Surface (F6) Depleted Dark Surface (F Redox Depressions (F8) Marl (F10) Depleted Ochric (F11) Iron-Manganese Masses Umbric Surface (F13) Delta Ochric (F17) Reduced Vertic (F18) Piedmont Floodplain Soil Anomalous Bright Loam			(F7) 1cm Muck (A9		(A9) (A10) ertic (F18) floodplain S Bright Loa Material (T	9) (10) c (F18) dplain Soils (F19) ight Loamy Soils (F20)		
Restrictive Layer (If Obs Type: Depth (inches):	served)			Remarks:	SOIL PAR	AMETER N	ОТ МЕТ.					

APPENDIX C REPRESENTATIVE PHOTOS

Photo: #1

Description:

Middle of the right of way.

Orientation:

North

Photographer:

Andrew McIntyre

Stantec

Photo date:

03/21/2019



Photo: #2

Description:

Middle of the right of way.

Orientation:

South

Photographer:

Andrew McIntyre

Stantec

Photo date:

03/21/2019





Photo: #3

Description:

Laydown yard in south portion of project area.

Orientation:

North

Photographer:

Andrew McIntyre

Stantec

Photo date:

03/21/2019



Photo: #4

Description:

Site entrance to Right of Way looking out to Old Bermuda Hundred Road (618).

Orientation:

South

Photographer:

Andrew McIntyre

Stantec

Photo date:

03/21/2019





Photo: #5

Description:

Site entrance to Right of Way from Old Bermuda Hundred Road (618).

Orientation:

North

Photographer:

Andrew McIntyre

Stantec

Photo date:

03/21/2019





APPENDIX D APPROVED JURISDICTIONAL DETERMINATION FORM

APPROVED JURISDICTIONAL DETERMINATION FORM U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION
A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): April 17, 2019

B.	DISTRICT OFFICE, FILE NAME, AND NUMBER: U.S. Army Corps of Engineers, Norfolk District
C.	PROJECT LOCATION AND BACKGROUND INFORMATION: State:Virginia County/parish/borough: Chesterfield County City: Center coordinates of site (lat/long in degree decimal format): Lat. 37.344777° N., Long77.395761° W. Universal Transverse Mercator:
	Name of nearest waterbody: James River Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: N/A Name of watershed or Hydrologic Unit Code (HUC): 02080206 Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request. Check if other sites (e.g., offsite mitigation sites, disposal sites, etc) are associated with this action and are recorded on a different JD form.
D.	REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY): Office (Desk) Determination. Date: Field Determination. Date(s): March 21st, 2019
SEC A.	CTION II: SUMMARY OF FINDINGS RHA SECTION 10 DETERMINATION OF JURISDICTION.
	re Are no "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the ew area. [Required] Waters subject to the ebb and flow of the tide. Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain:
В.	CWA SECTION 404 DETERMINATION OF JURISDICTION.
The	re Are no "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [Required
	1. Waters of the U.S. a. Indicate presence of waters of U.S. in review area (check all that apply): TNWs, including territorial seas Wetlands adjacent to TNWs Relatively permanent waters² (RPWs) that flow directly or indirectly into TNWs Non-RPWs that flow directly or indirectly into TNWs Wetlands directly abutting RPWs that flow directly or indirectly into TNWs Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs Impoundments of jurisdictional waters Isolated (interstate or intrastate) waters, including isolated wetlands
	b. Identify (estimate) size of waters of the U.S. in the review area: Non-wetland waters: linear feet: width (ft) and/or acres. Wetlands: acres.
	c. Limits (boundaries) of jurisdiction based on: Pick List Elevation of established OHWM (if known):
	2. Non-regulated waters/wetlands (check if applicable): ³ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain:

¹ Boxes checked below shall be supported by completing the appropriate sections in Section III below.
² For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

3 Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

	W

Identify TNW:

Summarize rationale supporting determination:

2. Wetland adjacent to TNW

Summarize rationale supporting conclusion that wetland is "adjacent":

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody⁴ is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:

Watershed size: Pick List
Drainage area: Pick List

Average annual rainfall: inches
Average annual snowfall: inches

(ii) Physical Characteristics:

(a) Relationship with TNW:

☐ Tributary flows directly into TNW.

Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **Pick List** river miles from TNW.

Project waters are **Pick List** river miles from RPW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Project waters are Pick List aerial (straight) miles from RPW.

Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW⁵:

Tributary stream order, if known:

⁴ Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West

⁵ Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

	(b)	General Tributary Characteristics (check all that apply): Tributary is: Natural Artificial (man-made). Explain: Manipulated (man-altered). Explain:
		Tributary properties with respect to top of bank (estimate): Average width: feet Average depth: feet Average side slopes: Pick List.
		Primary tributary substrate composition (check all that apply): Silts Sands Concrete Cobbles Gravel Muck Bedrock Vegetation. Type/% cover: Other. Explain:
		Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Presence of run/riffle/pool complexes. Explain: Tributary geometry: Pick List Tributary gradient (approximate average slope): %
	(c)	Flow: Tributary provides for: Pick List Estimate average number of flow events in review area/year: Pick List Describe flow regime: Other information on duration and volume:
		Surface flow is: Pick List. Characteristics: .
		Subsurface flow: Pick List. Explain findings: Dye (or other) test performed:
		Tributary has (check all that apply): Bed and banks OHWM ⁶ (check all indicators that apply): clear, natural line impressed on the bank changes in the character of soil shelving vegetation matted down, bent, or absent leaf litter disturbed or washed away sediment deposition water staining other (list): Discontinuous OHWM. ⁷ Explain: the presence of litter and debris destruction of terrestrial vegetation the presence of wrack line sediment sorting sediment sorting sediment sorting scour multiple observed or predicted flow events abrupt change in plant community
		If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply): High Tide Line indicated by: Oil or scum line along shore objects fine shell or debris deposits (foreshore) physical markings/characteristics tidal gauges other (list): Mean High Water Mark indicated by: survey to available datum; physical markings; vegetation lines/changes in vegetation types.
(iii)	Cha	emical Characteristics: racterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain: .tify specific pollutants, if known:

⁶A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

⁷Ibid.

	(iv)	Bio	logical Characteristics. Channel supports (check all that apply): Riparian corridor. Characteristics (type, average width): Wetland fringe. Characteristics:
			Habitat for: Federally Listed species. Explain findings: Fish/spawn areas. Explain findings: Other environmentally-sensitive species. Explain findings: Aquatic/wildlife diversity. Explain findings:
2.	Cha	aract	eristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW
	(i)		Visical Characteristics: General Wetland Characteristics: Properties: Wetland size: acres Wetland type. Explain: Wetland quality. Explain: Project wetlands cross or serve as state boundaries. Explain:
		(b)	General Flow Relationship with Non-TNW: Flow is: Pick List. Explain:
			Surface flow is: Pick List Characteristics:
			Subsurface flow: Pick List. Explain findings: Dye (or other) test performed:
		(c)	Wetland Adjacency Determination with Non-TNW: ☐ Directly abutting ☐ Not directly abutting ☐ Discrete wetland hydrologic connection. Explain: ☐ Ecological connection. Explain: ☐ Separated by berm/barrier. Explain:
		(d)	Proximity (Relationship) to TNW Project wetlands are Pick List river miles from TNW. Project waters are Pick List aerial (straight) miles from TNW. Flow is from: Pick List. Estimate approximate location of wetland as within the Pick List floodplain.
	(ii)	Cha	emical Characteristics: racterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .tify specific pollutants, if known:
	(iii)	Biol	Riparian buffer. Characteristics (type, average width): Vegetation type/percent cover. Explain: Habitat for: Federally Listed species. Explain findings: Fish/spawn areas. Explain findings: Other environmentally-sensitive species. Explain findings: Aquatic/wildlife diversity. Explain findings:
3.	Cha	All	eristics of all wetlands adjacent to the tributary (if any) wetland(s) being considered in the cumulative analysis: Pick List proximately () acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)

Size (in acres)

Directly abuts? (Y/N)

Size (in acres)

Summarize overall biological, chemical and physical functions being performed:

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

- 1. Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:
- 2. Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:
- 3. Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

D.	DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL
	THAT APPLY):

1.	TNWs and Adjacent Wetlands. Check all that apply and provide size estimates in review area: TNWs: linear feet width (ft), Or, acres. Wetlands adjacent to TNWs: acres.
2.	RPWs that flow directly or indirectly into TNWs. Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:
	Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

	Provide estimates for jurisdictional waters in the review area (check all that apply): Tributary waters: linear feet width (ft). Other non-wetland waters: acres. Identify type(s) of waters: .
3.	Non-RPWs ⁸ that flow directly or indirectly into TNWs. Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.
	Provide estimates for jurisdictional waters within the review area (check all that apply): Tributary waters: linear feet width (ft). Other non-wetland waters: acres. Identify type(s) of waters: .
4.	Wetlands directly abutting an RPW that flow directly or indirectly into TNWs. Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands. Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:
	Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:
	Provide acreage estimates for jurisdictional wetlands in the review area: acres.
5.	Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs. Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.
	Provide acreage estimates for jurisdictional wetlands in the review area: acres.
6.	Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs. Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.
	Provide estimates for jurisdictional wetlands in the review area: acres.
7.	Impoundments of jurisdictional waters. ⁹ As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional. Demonstrate that impoundment was created from "waters of the U.S.," or Demonstrate that water meets the criteria for one of the categories presented above (1-6), or Demonstrate that water is isolated with a nexus to commerce (see E below).
DEC SUC	DLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, GRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY CH WATERS (CHECK ALL THAT APPLY): 10 which are or could be used by interstate or foreign travelers for recreational or other purposes. from which fish or shellfish are or could be taken and sold in interstate or foreign commerce. which are or could be used for industrial purposes by industries in interstate commerce. Interstate isolated waters. Explain: Other factors. Explain:
Ide	ntify water body and summarize rationale supporting determination:

E.

 ⁸See Footnote # 3.
 9 To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
 10 Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.

	Provide estimates for jurisdictional waters in the review area (check all that apply): Tributary waters: linear feet width (ft). Other non-wetland waters: acres. Identify type(s) of waters: Wetlands: acres.
F.	NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY): If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements. Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce. Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR). Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: Other: (explain, if not covered above):
	Provide acreage estimates for non-jurisdictional waters in the review area, where the <u>sole</u> potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply): Non-wetland waters (i.e., rivers, streams): linear feet width (ft). Lakes/ponds: acres. Other non-wetland waters: acres. List type of aquatic resource: . Wetlands: acres.
	Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply): Non-wetland waters (i.e., rivers, streams): linear feet, width (ft). Lakes/ponds: acres. Other non-wetland waters: acres. List type of aquatic resource: . Wetlands: acres.
	SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below): Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Data sheets prepared/submitted by or on behalf of the applicant/consultant. Office concurs with data sheets/delineation report. Office does not concur with data sheets/delineation report. Data sheets prepared by the Corps: Corps navigable waters' study: U.S. Geological Survey Hydrologic Atlas: USGS NHD data. USGS 8 and 12 digit HUC maps. U.S. Geological Survey map(s). Cite scale & quad name: U.S. Geological Survey (USGS) 7.5-minute Topographical Quadrangle Maps for Chester, Virginia (1994 revision) and Hopewell, Virginia (1996 revision). Figure 1. USDA Natural Resources Conservation Service Soil Survey. Citation: Figure 4. National wetlands inventory map(s). Cite name: Figure 3. State/Local wetland inventory map(s): FEMA/FIRM maps: Figure 5. 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929) Photographs: Aerial (Name & Date): Other (Name & Date): Previous determination(s). File no. and date of response letter:
	Applicable/supporting case law: Applicable/supporting scientific literature: Other information (please specify):

B. ADDITIONAL COMMENTS TO SUPPORT JD:



Memo

To: Amanda Mayhew

Dominion Energy

10900 Nuckols Road, 4th Floor Glen Allen, Virginia 23060

File: 203401247

From: Corey Gray

Stantec Consulting Services, Inc.

5209 Center Street Williamsburg, VA 23188

Date: February 27, 2019

Reference:

Chesterfield - Tyler 230 kV Partial Rebuild Project, Chesterfield County, Virginia: Solid & Hazardous Waste

Search

Stantec conducted database searches for solid and hazardous wastes and petroleum release sites within a 0.5-mile radius of the proposed Chesterfield - Tyler 230 kV Partial Rebuild project. The project is in Chesterfield County, Virginia and will take place within the existing transmission line right-of-way (ROW) with no additional ROW required. The project consists of a partial rebuild of approximately 2.5 miles of double circuit 230 kV transmission line (Lines 205 and 2003).

Stantec obtained publicly available data from the Environmental Protection Agency (EPA) Facility Registry System (FRS), which provide information about facilities, sites, or places subject to environmental regulation or of environmental interest. Although this data set includes all sites subject to environmental regulation by the EPA or other state authority, such as sites that fall under air emissions or wastewater programs, the results reported here only include those sites which fall under the EPA's hazardous waste, solid waste, remediation, and underground storage tank programs. These sites include Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)/Superfund; Resource Conservation and Recovery Act (RCRA); and brownfield sites. Per this database, there are eighteen registered RCRA sites present within a 0.5-mile radius of the project (see Table 1). A review of the FRS forms has determined that some sites are unspecified. Most sites are listed as conditionally exempt small quantity generators and are located well outside the ROW. None of these sites are expected to be a concern for the project due to the distance and nature of the sites. The Chesterfield Power Station is listed as a RCRA site; however, the site is managed by Dominion Energy and is not anticipated to be a concern for the project.

The Virginia Department of Environmental Quality (DEQ) records were also searched for the presence of solid waste management facilities, Voluntary Remediation Program sites and petroleum releases within 0.5 mile of the proposed project. A total of seventeen (17) petroleum release sites were identified within the search radius. All but one petroleum release site have been closed. The remaining open site, 19941599, is associated with the Chesterfield Power Station and is located north of the partial rebuild project. As this release occurred in 1993, it is expected that the DEQ records need to be updated and this case should be closed. None of the other identified petroleum release sites identified within 0.5 mile of the proposed project intersect with the project ROW and all other cases have been closed (Table 3). Dominion Energy has a procedure in place to handle petroleum contaminated soil, if encountered; however, as all the release sites are located outside of the project area, none of the petroleum release sites are expected to have an impact on the proposed project.

One solid waste permit, Chesterfield Power Station, is located within 0.5 mile of the proposed project (Table 4). The project ROW is located within the power station; however, the power station ash ponds associated with the solid waste permit are not located within the ROW.

In summary, a total of eighteen RCRA sites, seventeen petroleum release sites, and one solid waste permit site are located within a 0.5-mile radius of the project site; however, none of the sites are located within the project ROW. No EPA registered Brownfield sites or CERCLA/Superfund sites are located within 0.5 mile of the project area.



ject.	Proximity to Centerline (feet)	2,466	0	375	700	692	1,090	1,562	1,103
Rebuild Pro	Longitude	-77.3884	-77.3779	-77.3957	-77.3973	-77.3977	-77.391	-77.3973	-77.3981
30 kV Partia	Latitude	37.34646	37.3821	37.36393	37.3539	37.35033	37.3764	37.36409	37.3647
rfield - Tyler 23	Location	Chesterfield	Chesterfield	Chesterfield	Chesterfield	Chesterfield	Chesterfield	Chesterfield	Chesterfield
by the EPA as occurring within 0.5-mile of the Chesterfield - Tyler 230 kV Partial Rebuild Project.	Interest Type	RCRA - Conditionally Exempt Small Quantity Generator	ICIS-Major, NPDES-MAJOR, TSCA, RCRA, TRI	RCRA - Conditionally Exempt Small Quantity Generator	RCRA - Unspecified Universe	RCRA - Small Quantity Generator	RCRA - Conditionally Exempt Small Quantity Generator	State Master	TRI, RCRA - Unspecified Universe
	Site Name	Altec Industries, INC.	Chesterfield Power Station	Columbia Gas of Virginia	Raceway #288	Saia Motor Freight	Enivronmental Lab And Technical Training Center	TCS Materials - Old Stage Road	Wood Mart of VA Company
Table 1. Hazardous waste sites identified	Facility ID Number	VAR000531525	ICIS:22272, ICIS:22273, ICIS:340057595, ICIS:340057596, ICIS:3600415780, NPDES:VA0004146, NPDES:VAN040086, RBLC:2503, RCRAINFO:VAD000621177 TRIS:23836CHSTR500CO, TSCA:100605232	VAR000502427	VAD988208336	VAR000519512	VAR000009233	CEDS:200000073083	RCRAINFO:VAD151207446 TRIS:23831WDMRT12100



February 27, 2019 Amanda Mayhew Page 3 of 9

Proximity to Centerline (feet)	2,548	1,122	1,636	1,615	1,828	2,365	645	1,243	1,503
Longitude	-77.378	-77.3903	-77.4005	-77.3994	-77.3911	-77.3871	-77.3925	-77.3939	-77.3813
Latitude	37.38145	37.37756	37.34905	37.34749	37.34679	37.35086	37.35791	37.37369	37.37711
Location	Chesterfield	Chesterfield	Chesterfield	Chesterfield	Chesterfield	Chesterfield	Chesterfield	Chesterfield	Chesterfield
Interest Type	Biosolids, ICIS-NPDES Major, ICIS-NPDES Non-Major, NPDES Pretreatment Program, POTW, Unspecified Universe	Air Minor, Hazardous Air Pollutant Major, Hazardous Waste Biennial Reporter, State Master, TRI Reporter, Unspecified Universe	RCRA - Conditionally Exempt Small Quantity Generator	Hazardous Waste Biennial Reporter, Unspecified Universe	Compliance Activity, Unspecified Universe	RCRA - Conditionally Exempt Small Quantity Generator	RCRA - Unspecified Universe	Air Synthetic Minor, State Master, TRI Reporter	Air Minor, Enforcement/Compliance Activity, ICIS-NPDES Non- Major, SQG, State Master
Site Name	Chesterfield County MS4	The Hon Company	Penske Truck Leasing CO., LP	FedEx Freight Richmond	Adamson Global Technology Corporation	Heartland Express	Allwaste Services of Virginia INC.	Ready Mixed Concrete Company - Old Stage Road	Peirce Mechanical INC.
Facility ID Number	NPDES:VA0060194, NPDES:VA0088609, NPDES:VAL060194, RCRAINFO:VAD000765628	AIR:VA0000005104100133, AIRS/AFS:5104100133, BR:VAD055046502, CEDS:200000093062, EIS:6868611, RCRAINFO:VAD055046502 TRIS:23831THHNC11200	VAR000515502	VAR000517219	RCRAINFO:VAD004168357	VAD988174785	VAD988193298	AIR:VA0000005104100483, AIRS/AFS:5104100483, CEDS:200000205860, TRIS:2383WRGSCN114LD	AIR:VA0000005104100102, AIRS/AFS:5104100102, CEDS:200000073099, ICIS:3400055033, NPDES:VA0088153, RCRAINFO:VAD980714810



February 27, 2019 Amanda Mayhew

Page 4 of 9

Proximity to Centerline (feet)	1,990
Longitude	-77.3884
Latitude	37.35022
Location	Chesterfield 37.35022
Interest Type	RCRA - Small Quantity Generator
Site Name	REC INC.
Facility ID Number	VAD070429485



February 27, 2019 Amanda Mayhew Page 5 of 9

Table 2: State registered storage tanks identified to occur within a 0.5-mile radius of the Chesterfield - Tyler 230 kV Partial Rebuild Project.

Status	Active	Active	Active	Active	Active	Active	Active	Active	Inactive	Inactive	Active	Inactive	Inactive	Inactive	Inactive
Proximity to Centerline (feet)	1,378	2,042	2,115	930	206	846	1,769	1,252	482	2,000	1,458	1,221	1,206	2,317	2,362
Longitude	-77.383603	-77.40069323	-77.38985476	-77.391755	-77.39770129	-77.39690297	-77.39987147	-77.3996	-77.396636	-77.390425	-77.399014	-77.39095001	-77.39325099	-77.387236	-77.38711399
Latitude	37.38352	37.34672122	37.34643103	37.354818	37.36000758	37.36803809	37.34708464	37.350395	37.35456201	37.346407	37.368202	37.352147	37.37429	37.35127	37.35086
Location	Chesterfield	Chesterfield	Chesterfield	Chesterfield	Chesterfield	Chesterfield	Chesterfield	Chesterfield	Chesterfield	Chesterfield	Chesterfield	Chesterfield	Chesterfield	Chesterfield	Chesterfield
Site Name	Chesterfield Power Station	FedEx Freight East Incorporated	Heartland Express Incorporated	The Contractor Yard Inc	Quarles Q Card Fuel Site	Conway Transportation Services	Cardinal Freight Leased to Epes Transport	E Fueling Network	Suburban Propane	ABC Building Supply	Ruan	Sonoco Products Company	VEPCO - Central Division Satellite Garage	Oil Transport Incorporated	Pine Tree Nursery
UST OR AST	UST & AST	UST	UST	AST	UST	UST	UST	UST	UST	UST	UST	UST	UST	UST	UST
Facility ID Number	4012652	4037458	4037550	4039179	4039756	4037734	4039583	4039597	4018954	4018758	4002111	4002086	4020542	4002021	4013088



February 27, 2019 Amanda Mayhew

Page 6 of 9

Reference: Chesterfield - Tyler 230 kV Partial Rebuild Project, Chesterfield County, Virginia: Solid & Hazardous Waste Search

Status	Active	Inactive	Inactive	Inactive	Inactive	Inactive	Inactive	Inactive	Active	Active	Active
Proximity to Centerline (feet)	645	2,073	170	1,148	1,067	154	1,996	1,553	1,470	2,435	741
Longitude	-77.39725044	-77.379254	-77.394706	-77.39187101	-77.398689	-77.395586	-77.39048701	-77.389925	-77.39996955	-77.40325668	-77.397072
Latitude	37.35387589	37.378255	37.350367	37.375584	37.354086	37.353517	37.346375	37.35054	37.34874762	37.35608552	37.360767
Location	Chesterfield	Chesterfield	Chesterfield	Chesterfield	Chesterfield	Chesterfield	Chesterfield	Chesterfield	Chesterfield	Chesterfield	Chesterfield
Site Name	Raceway 6787	Proctors Creek Wastewater Plant	Epes Trucking	VEPCO Comm Operations Training Center	Ruan	Richmond Cold Storage Chester	Adamson Global Technology	First Impressions	Penske Truck Leasing Corp	7 Eleven Inc 40023	Chester Asphalt Plant
UST OR AST	UST	UST	UST	UST	UST	UST	UST	UST	UST & AST	UST	AST
Facility ID Number	4018303	4001640	4001604	4008923	4010667	4025338	4014675	4026914	4040736	4009866	4043346



February 27, 2019 Amanda Mayhew

Page 7 of 9