

ATTACHMENT E-2

WETLAND DELINEATION REPORTS:

SITE SEPARATION

Dominion North Anna Power Station
Wetland Delineation for Site Separation Projects

Prepared for:

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1.0 INTRODUCTION

The North Anna Power Station (NAPS) is a nuclear power plant with the capacity to generate 1,786 megawatts of electricity from two units. NAPS is located in Louisa County, near the town of Mineral, on a peninsula on the southern shore of Lake Anna, approximately 5 miles upstream of the North Anna Dam (Figure 1). Dominion is an indirect, wholly-owned subsidiary of Dominion Resources, Inc. Virginia Electric and Power Company (Virginia Power), operates the existing nuclear units on the NAPS site and is a wholly-owned subsidiary of Dominion Resources, Inc. Virginia Power owns the land above and below the lake surface and around the lake up to the expected high-water mark.

Dominion proposes to expand the NAPS site to provide additional electric service to meet the growing demand for electricity. In order to prepare the site for the proposed expansion, several projects (known as Site Separation) have been proposed to separate the existing Units 1 and 2 and their associated facilities from the proposed construction of Unit 3.

EA Engineering, Science, and Technology, Inc. (EA) performed a wetland delineation on March 4 and 5, 2008 within the areas proposed for Site Separation. The Site Separation projects with proposed wetland impacts include a road expansion, construction of a paint shop, and a parking lot. This delineation report defines those lands that may be subject to the U.S. Army Corps of Engineers (USACE) and/or Virginia Department of Environmental Quality's (VDEQ) regulatory jurisdiction under the Clean Water Act and Virginia wetland regulations.

2.0 METHODOLOGY

The wetland delineation was conducted in accordance with the procedures outlined in the 1987 *Corps of Engineers Wetland Delineation Manual* (USACE 1987). This is the wetland delineation approach currently recognized by reviewing agencies including the USACE and the VDEQ. This procedure involves the three parameter approach that includes the identification of hydrophytic vegetation, hydric soils, and wetland hydrology. All three wetland criteria are generally required for an area to be considered a jurisdictional wetland by the USACE.

2.1 Hydrophytic Vegetation

The hydrophytic vegetation criterion involves determination of the dominance of hydrophytic plant species that are adapted to living in areas where the soil saturation and/or inundation is of sufficient duration during the growing season to influence the plant community composition. Plant species that are commonly found in wetlands have been categorized by the U.S. Fish and Wildlife Service in the *National List of Plant Species That Occur in Wetlands: Northeast-Region 1* (Reed, 1988). Each plant listed is categorized by a regional wetland indicator or "hydrophytic" status in four categories as follows:

- Obligate (OBL) = Greater than 99 percent estimated probability of occurring in wetlands
- Facultative Wetland (FACW) = 67 to 99 percent estimated probability of occurring in wetlands
- Facultative (FAC) = 34 to 66 percent estimated probability of occurring in wetlands
- Facultative Upland (FACU) = 1 to 33 percent estimated probability of occurring in wetlands
- Positive (+) and negative (-) signs are modifiers used for the facultative categories. The (+) sign indicates a frequency toward the wetter end of the category (more frequently found in wetlands) and the (-) sign indicates a frequency toward the drier end of the category (less frequently found in wetlands).

An area is considered to have a dominance of hydrophytic vegetation if greater than 50 percent of the dominant plant species are OBL, FACW, or FAC (excluding FAC-) on the lists of plant species that occur in wetlands.

2.2 Hydric Soils

Hydric soils are soils that are saturated, ponded, or flooded for a sufficient duration during the growing season and develop anaerobic conditions that result in chemical reduction of elements, particularly iron. This results in gleyed soils that are characterized by soil coloration. Hydric soils may also be characterized by bright mottles and/or low matrix chroma. A hydric mineral soil will have either a matrix chroma of 2 or less in mottled soils or a matrix chroma of 1 or less in unmottled soils below the A-horizon or at a depth of 10 inches, whichever is shallower. Soil cores are taken during the field investigation in suspected wetland areas and the soil core value/chroma is compared to those provided in the Munsell Soil Color Charts (Kollmorgen Instruments Corporation 1992). Other indicators of hydric soil conditions that are identifiable when sampling soils in the field include high organic content, histic epipedons, concretions, and/or a sulfidic odor.

2.3 Wetland Hydrology

Wetland hydrology supplies the moisture required to support wetland vegetation and create conditions necessary for the formation of hydric soil characteristics. A variety of information sources may be used to help identify potential areas with wetland hydrology. These sources include topographic maps (to assist in locating low lying area or drainage courses), aerial photographs (to identify areas of ponded water), and soil surveys (to identify soils in poorly drained hydrologic groups and soils with capability units

indicative of wetness limitations). Primary indicators of wetland hydrology include visual observation of inundation or saturation, watermarks, drift lines, sediment deposits, and wetland drainage patterns. Secondary indicators of wetland hydrology (of which two or more are required to determine wetland hydrology) include oxidized root channels, water-stained leaves, local soil survey data, and the FAC-Neutral test. The FAC-Neutral test involves comparison of the number of Obligate (OBL) and Facultative Wetland (FACW) plant species to the number of Facultative Upland (FACU) and Upland (UPL) plant species, with Facultative (FAC) species being neutral.

The USACE technical guideline for wetlands requires that a positive wetland indicator be present for each of the three identified parameters (hydrophytic vegetation, hydric soils, and wetland hydrology), except in limited instances identified in the 1987 *Corps of Engineers Wetland Delineation Manual*.

Potential wetlands were flagged in the field with pink flagging tape, surveyed, and imported into a GIS system to determine total wetland acreage on the site.

3.0 RESULTS

Based upon a field analysis of the vegetation, soils, and hydrology conducted in accordance with the 1987 Corps of Engineers Wetland Delineation Manual, EA personnel identified and flagged three potential non-tidal wetland areas within the lands proposed for the Site Separation projects (Figure 2). The wetland areas observed totaled 43,952 square feet (1.01 acres). Supporting documentation for the wetland delineation findings is included in the appendices of this document.

The vegetation in adjacent upland areas was typical of the region. Vegetation species identified on the project site and their hydrophytic status are provided in Table 1. USACE field data sheets for the wetland areas within the project site are attached as Appendix A and photographs of the wetland areas are presented in Appendix B. The wetland areas identified onsite and flagged are discussed below:

Wetland System A

Wetland System A was located in an area selected for a proposed parking lot. This area is classified as a forested wetland and is associated with a small perennial stream that contained braided channels. The channels flowed in a south direction into the waste heat treatment portion of Lake Anna. Wetland System A totaled 26,403 square feet (0.61 acres).

The dominant vegetation within this wetland area consisted of American hornbeam (*Carpinus caroliniana*), American beech (*Fagus grandifolia*), eastern red cedar (*Juniperus virginiana*), American holly (*Ilex opaca*), sweetgum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), and common greenbrier (*Smilax rotundifolia*). The soil matrix within the area had a chroma value of 10YR5/2 within the A horizon (0-8 inches) and a 10YR6/1 within the B horizon (8-12 inches). Mottles, characterized as

bright and many, were observed within the B-horizon with a chroma value of 10YR6/8. The A-horizon was classified as a sandy clay and the B-horizon was classified as a clay sand.

Wetland hydrology indicators included inundation, saturation in the upper 12 inches, sediment deposits, and drainage patterns. Water-stained leaves were observed as a secondary hydrologic indicator. Water (0-5 inches) was observed flowing in the channel after a rain event that occurred on March 5, 2006.

Wetland System B

Wetland System B was located within an engineered swale between the emergency water reservoir and a culvert at an existing road. The culvert beneath the roadway was partially blocked by sediment and vegetative debris. The wetland area was located in an area selected for a proposed road widening project and paint shop. Wetland System B totaled 15,534 square feet (0.36 acres).

Wetland System B was classified as an emergent wetland area and the dominant species included alder hazel (*Alnus serrulata*), broad-leaf cattail (*Typha latifolia*), woolgrass (*Scirpus cyperinus*), soft rush (*Juncus effuses*), and saplings of black willow (*Salix nigra*). Two soil samples were collected within the wetland area. The first sample was collected close to the culvert. The soil matrix within the first soil sample had a chroma value of 2.5Y6/3 in the A-horizon (0-2 inches), 2.5Y6/1 in the B-horizon (2-6 inches), and 2.5Y5/1 in the B-horizon (6-12 inches). No mottles were observed. The samples were classified as silt with organics in the A-horizon, medium sand in the B-horizon (2-6 inches), and a coarse sand in the last 6 inches of the B-horizon. The second soil sample was located closer to the emergency water reservoir and had a chroma value of 5YR4/1 in the O-horizon (0-2 inches), 5BG4/1 in the A-horizon (2-6 inches), and 5GY6/1 in the B-horizon (6-12 inches). No mottles were observed in the second soil sample. The A-horizon was classified as gravel fines with organics and the B-horizon was classified as gravel fines with silt.

Primary hydrology indicators were observed and included inundation, saturation in the upper 12 inches, sediment deposits, and observations of drainage patterns. The surface water depth was approximately 6 inches and water was observed in the soil pit.

Wetland System C

Wetland System C was a small depressed area associated with the same proposed with the same proposed parking lot associated with Wetland System A. This area appears to have been previously scraped by a bulldozer or other piece of equipment presumably during past construction activities. The wetland area was classified as a forested wetland. Wetland System C totaled 2,016 square feet (0.05 acres).

The dominant vegetation within this wetland system was woolgrass and sweetgum. Surrounding the wetland area was eastern red cedar (*Juniperus virginiana*) and Virginia

pine (*Pinus virginiana*). One soil sample was collected within the wetland area. The soil matrix had a chroma value of 10YR6/1 in the O-horizon (0-0.5 inches), 10YR6/2 in the A-horizon (0.5-4 inches), and 10YR8/2 in the B-horizon (4-12 inches). Many and bright mottles were observed within the A-horizon with a chroma value of 7.5YR5/6. The A and B-horizon was classified as a clay sand.

Approximately 8 inches of standing water was observed in portions of the wetland area. Primary wetland hydrologic indicators included inundation and saturation in the upper 12 inches. Water-stained leaves were also observed as a secondary hydrologic indicator. The soil was saturated and the depth to free water in the soil pit was 2 inches.

4.0 REGULATORY COORDINATION

The field investigation characterized the wetland resources within the project areas. Wetland investigations of this type reflect the current state of temporal and variable conditions, thus requiring individual professional judgment when evaluating a site. Therefore, the wetland delineation is EA's professional estimate of the wetlands located within the Site Separation project areas based on the delineation methodology utilized and the best technical information available related to the project site and the time of study.

Wetland boundaries, as defined by regulatory purposes, can only be verified through a site review by the USACE or VDEQ. After review of the wetland boundaries, the USACE or VDEQ representative may provide a letter documenting acceptance of the wetland boundaries.

5.0 SUMMARY AND CONCLUSIONS

Based upon a field analysis of the vegetation, soils, and hydrology conducted in accordance with the 1987 Corps of Engineers Wetland Delineation Manual, EA personnel identified and flagged three potential non-tidal wetland areas within the lands proposed for the Site Separation projects.

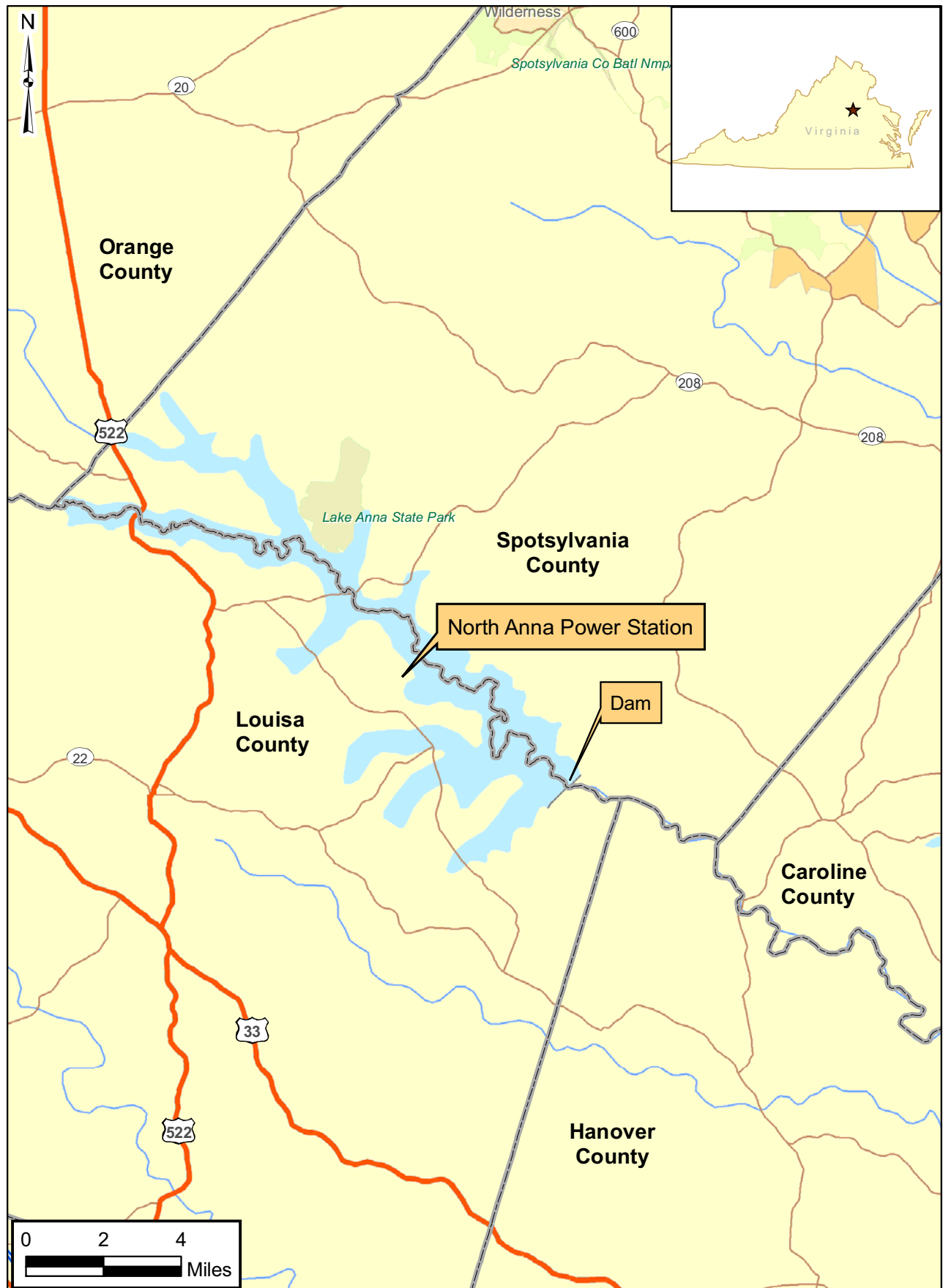
Two wetland areas were classified as forested and are within the proposed area for a parking lot and one area was classified as emergent and is located within a proposed road widening project and construction of a proposed paint shop. The wetland areas observed totaled 43,952 square feet (1.01 acres).

6.0 REFERENCES

Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1*. U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.

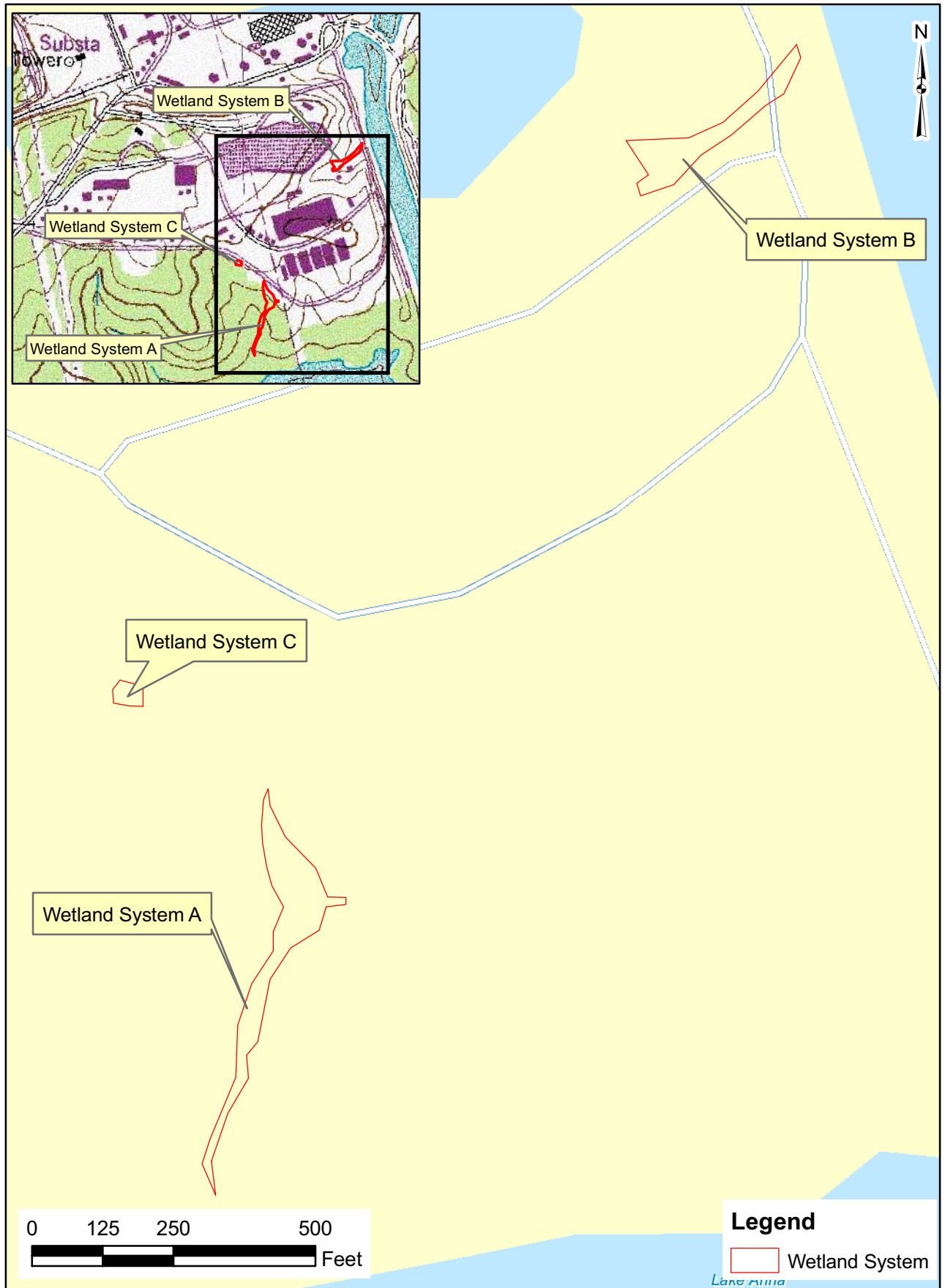
Kollmorgen Instruments Corp. 1992. *Munsell Soil Color Charts*. New York.

Reed, Porter B. 1988. *National List of Plant Species That Occur in Wetlands Northeast (Region I)*. National Ecology Research Center, U.S. Fish and Wildlife Service. May.



Q:\projects\GIS\1439101\WXD\Figure 1. General Location Map.mxd

Figure 1. General Location Map



C:\projects\GIS\1439101\MXD\Figure 2. Wetland Areas Delineated.mxd

Figure 2. Wetland Areas Delineated

Table 1. Plant Species Identified During the Wetland Delineation, March 2008

Scientific Name	Common Name	Hydrophytic Status
Tree Species		
<i>Acer rubrum</i>	Red maple	FAC
<i>Carpinus caroliniana</i>	Ironwood	FAC
<i>Fagus grandifolia</i>	American beech	FAC+
<i>Juniperus virginiana</i>	Eastern red cedar	FACU
<i>Ilex opaca</i>	American holly	FACU+
<i>Liquidambar styraciflua</i>	Sweetgum	FAC
<i>Pinus virginiana</i>	Virginia Pine	FACU
<i>Salix nigra</i>	Black willow	FACW+
Herbaceous Species		
<i>Alnus serrulata</i>	Alder hazel	OBL
<i>Juncus effusus</i>	Soft rush	FACW+
<i>Scirpus cyperinus</i>	Woolgrass	FACW+
<i>Typha latifolia</i>	Broadleaf cattail	OBL
Vine Species		
<i>Smilax rotundifolia</i>	Common greenbrier	FAC

Source: Reed, 1988

- *OBL=Obligate. Greater than 99 percent estimated occurrence in wetlands
- FACW=Facultative Wetland. 67 to 99 percent estimated occurrence in wetlands
- FAC=Facultative. 34 to 66 percent estimated occurrence in wetlands
- FACU=Facultative Upland. 1 to 33 percent estimated occurrence in wetlands
- UNK=Unknown. Hydrophytic status unknown

APPENDIX A
WETLAND DELINEATION DATA FORMS

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>Proposed Parking Lot</u> Applicant/Owner: <u>Dominion</u> Investigator: <u>Leasure, Harden</u>	Date: <u>2/6/08 and 3/5/08</u> County: <u>Louisa</u> State: <u>Virginia</u>
Do Normal Circumstances exist on the site? <input type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input type="checkbox"/> No Is the area a potential Problem Area? <input type="checkbox"/> Yes <input type="checkbox"/> No (If needed, explain on reverse.)	Community ID: <u>PFO</u> Transect ID: _____ Plot ID: <u>A</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Carpinus caroliniana</u>	<u>Tree</u>	<u>FAC</u>	9. _____	_____	_____
2. <u>Smilax rotundifolia</u>	<u>Vine</u>	<u>FAC</u>	10. _____	_____	_____
3. <u>Fagus grandifolia</u>	<u>Tree</u>	<u>FAC+</u>	11. _____	_____	_____
4. <u>Juniperus virginiana</u>	<u>Tree</u>	<u>FACU</u>	12. _____	_____	_____
5. <u>Ilex opaca</u>	<u>Tree</u>	<u>FACU+</u>	13. _____	_____	_____
6. <u>Liquidambar styraciflua</u>	<u>Tree</u>	<u>FAC</u>	14. _____	_____	_____
7. <u>Acer rubrum</u>	<u>Tree</u>	<u>FAC</u>	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 71%

Remarks:

HYDROLOGY

<p>___ Recorded Data (Describe in Remarks): ___ Stream, Lake, or Tide Gauge ___ Aerial Photographs ___ Other <input checked="" type="checkbox"/> No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p>Depth of Surface Water: <u>0-5</u> (in.)</p> <p>Depth to Free Water in Pit: <u>0</u> (in.)</p> <p>Depth to Saturated Soil: <u>0</u> (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators: <input checked="" type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 Inches ___ Water Marks ___ Drift Lines <input checked="" type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required): ___ Oxidized Root Channels in Upper 12 Inches <input checked="" type="checkbox"/> Water-Stained Leaves ___ Local Soil Survey Data ___ FAC-Neutral Test ___ Other (Explain in Remarks)</p>
Remarks: <u>Braided channels, minor floodplain. Wetland wash at end of CMP. Heavy rain on morning of 3/5/08 - flowing water in creek</u>	

SOILS

Map Unit Name (Series and Phase): _____		Drainage Class: _____			
Taxonomy (Subgroup): _____		Field Observations Confirm Mapped Type? Yes No			
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-8	A	10YR5/2	---	---	Sandy Clay
8-12	B	10YR6/1	10YR6/8	Bright, Many	Clay Sand
0-6	A	10YR5/3	---	---	Sand
6-12	B	10YR6/8	---	---	Sand
Hydric Soil Indicators:					
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors		<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)			
Remarks:					

Upland
Soil

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes No (Circle) Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes No Hydric Soils Present? <input checked="" type="checkbox"/> Yes No	(Circle) Is this Sampling Point Within a Wetland? <input checked="" type="checkbox"/> Yes No
Remarks:	

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>Proposed Road Project and Paint Shop Project</u> Applicant/Owner: <u>Dominion</u> Investigator: <u>Leasure, Harden</u>	Date: <u>2/6/08 and 3/4/08</u> County: <u>Louisa</u> State: <u>Virginia</u>
Do Normal Circumstances exist on the site? <input type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input type="checkbox"/> No Is the area a potential Problem Area? <input type="checkbox"/> Yes <input type="checkbox"/> No (If needed, explain on reverse.)	Community ID: <u>PEM</u> Transect ID: _____ Plot ID: <u>B</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Salix nigra</u>	<u>Tree</u>	<u>FACW+</u>	9. _____	_____	_____
2. <u>Alnus serrulata</u>	<u>Tree</u>	<u>OBL</u>	10. _____	_____	_____
3. <u>Typha latifolia</u>	<u>Herb</u>	<u>OBL</u>	11. _____	_____	_____
4. <u>Scirpus cyperinus</u>	<u>Herb</u>	<u>FACW+</u>	12. _____	_____	_____
5. <u>Juncus effusus</u>	<u>Herb</u>	<u>FACW+</u>	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Some leaf pack in bottom of swale

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available <hr/> Field Observations: Depth of Surface Water: <u>6</u> (in.) Depth to Free Water in Pit: <u>0</u> (in.) Depth to Saturated Soil: <u>0</u> (in.)	Wetland Hydrology Indicators: Primary Indicators: <input checked="" type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input checked="" type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: <u>Engineered swale with standing water. Swale located between emergency water reservoir and culvert at roadway. Culvert beneath roadway partially blocked by sediment and vegetative debris.</u>	

SOILS

Map Unit Name (Series and Phase): _____		Drainage Class: _____				
Taxonomy (Subgroup): _____		Field Observations Confirm Mapped Type? Yes No				
Profile Description:						
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.	
Sample 1	0-2	A	2.5Y6/3	---	---	Silt with Organics
	2-6	B	2.5Y6/1	---	---	Medium Sand
	6-12	B	2.5Y5/1	---	---	Coarse Sand
Sample 2	0-2	O	5YR4/1	---	---	Organics
	2-6	A	5BG4/1	---	---	Gravel fines with organics
	6-12	B	5GY6/1	---	---	Gravel fines with silt
Hydric Soil Indicators:						
<input type="checkbox"/> Histic Epipedon		<input type="checkbox"/> Concretions		<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils		
<input type="checkbox"/> Sulfidic Odor		<input type="checkbox"/> Organic Streaking in Sandy Soils		<input type="checkbox"/> Listed on Local Hydric Soils List		
<input type="checkbox"/> Aquic Moisture Regime		<input type="checkbox"/> Listed on National Hydric Soils List		<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Reducing Conditions		<input type="checkbox"/> Gleyed or Low-Chroma Colors				
<input checked="" type="checkbox"/>						
Remarks: Upland Soil - 0-3, A, 10YR4/2, No Mottles, Sandy Silt 3-12, B, 10YR6/6, No Mottles, Coarse Sand						
Soils collected on 3/4/08						

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes	No (Circle)			
Wetland Hydrology Present?	<input checked="" type="checkbox"/> Yes	No		(Circle)	
Hydric Soils Present?	<input checked="" type="checkbox"/> Yes	No			
			Is this Sampling Point Within a Wetland?	<input checked="" type="checkbox"/> Yes	No
Remarks:					

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>Proposed Parking Lot</u> Applicant/Owner: <u>Dominion</u> Investigator: <u>Leasure, Harden</u>	Date: <u>3/5/08</u> County: <u>Louisa</u> State: <u>Virginia</u>
Do Normal Circumstances exist on the site? <input type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input type="checkbox"/> No Is the area a potential Problem Area? <input type="checkbox"/> Yes <input type="checkbox"/> No (If needed, explain on reverse.)	Community ID: <u>PFO</u> Transect ID: _____ Plot ID: <u>C</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Scirpus cyperinus</u>	<u>Herb</u>	<u>FACW+</u>	9. _____	_____	_____
2. <u>Liquidambar styraciflua</u>	<u>Tree</u>	<u>FAC</u>	10. _____	_____	_____
3. _____	_____	_____	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Red cedar and virginia pine trees adjacent to wetland area

HYDROLOGY

___ Recorded Data (Describe in Remarks): ___ Stream, Lake, or Tide Gauge ___ Aerial Photographs ___ Other <u>X</u> No Recorded Data Available <hr/> Field Observations: Depth of Surface Water: <u>0-8</u> (in.) Depth to Free Water in Pit: <u>2</u> (in.) Depth to Saturated Soil: <u>0</u> (in.)	Wetland Hydrology Indicators: Primary Indicators: <u>X</u> Inundated <u>X</u> Saturated in Upper 12 Inches ___ Water Marks ___ Drift Lines ___ Sediment Deposits ___ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ___ Oxidized Root Channels in Upper 12 Inches <u>X</u> Water-Stained Leaves ___ Local Soil Survey Data ___ FAC-Neutral Test ___ Other (Explain in Remarks)
Remarks: <u>Heavy rain during the morning of 3/5/08</u>	

SOILS

Map Unit Name (Series and Phase): _____		Drainage Class: _____			
Taxonomy (Subgroup): _____		Field Observations Confirm Mapped Type? Yes No			
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-0.5	O	10YR6/1	---	---	Sandy Clay with Organics
0.5-4	A	10YR6/2	7.5YR5/6	Bright, Many	Clay Sand
4-12	B	10YR8/2	---	---	Clay Sand
0-1	O	10YR2/2	---	---	Organics
1-7	A	10YR5/6	---	---	Medium Sand
7-12	B	10YR5/6	---	---	Sandy Silt
Hydric Soil Indicators:					
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input type="checkbox"/> Gleyed or Low-Chroma Colors		<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)			
Remarks:					

Upland
Soil

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes No (Circle)	(Circle)
Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes No	
Hydric Soils Present? <input checked="" type="checkbox"/> Yes No	Is this Sampling Point Within a Wetland? <input checked="" type="checkbox"/> Yes No
Remarks: Wetland area previously scraped by bulldozer. Small isolated wetland area.	

Approved by HQUSACE 3/92

APPENDIX B
PHOTOGRAPHIC RECORD

Photographic Record

**Wetland Delineation for Site Separation Projects
Dominion Energy
March 4 and 5, 2008**



Wetland Area A - Stream and wetland area, northern area. View facing north.



Wetland Area A - Stream and wetland area, southern portion. View facing north.



Wetland Area B – Southern portion of wetland area. View facing northwest.



Wetland Area B – Central portion of wetland area. View facing southwest.



Wetland Area B – Northern portion of wetland area. View facing east.



Wetland Area C - Small isolated wetland. View facing east.