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# Proposed 230kV USW Substation Site Wetland Investigation Report



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Landmark Project No. C2946.1

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# Proposed 230kV USW Substation Site

## Wetland Investigation Report

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## Summary

This document presents the findings from the wetland field investigation completed for the designated study area identified as the proposed location for the 230kV USW Substation facility and supporting features situated within the Indian River Power, LLC property located at 29416 Power Plant Road in Millsboro, Delaware. The Tax Parcel Number for the designated study area is 2-33-2-2. This report is suitable for submittal to state and federal agencies. All information contained within this report has been field collected and summarized by Landmark Science & Engineering. Formal surveyed field delineations were performed within the designated study area as identified by Landmark Science & Engineering both in the field and on provided site drawings titled "Wetlands Plan for U.S. Wind" dated May 10, 2021. The delineated features on the plan are based on the experience and best professional judgment of Landmark Science & Engineering staff and scientists. Any disturbance of these areas may be subject to U.S. Army Corps of Engineers (USACE) and Delaware Department of Natural Resources and Environmental Control (DNREC) review.

The investigation was performed within the boundaries of the designated study area as shown on Figures 1 and 2. The designated study area consisted mainly of forested areas with interspersed maintained clearings and old field areas, paved parking areas and access roads, and two existing substations. The designated study area was bordered by tidal wetlands and marshes to the north and west in association with Indian River. The limits of Waters of the U.S. including tidal and non-tidal wetlands within the designated study area were delineated by Landmark on May 3-4, 2021. Portions of the designated study area appeared to have been disturbed in the past and is presently maintained by the property owner. This report was performed in accordance with the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region, November 2010.

The investigation concluded that vegetated tidal wetlands and non-tidal wetlands in association with Indian River, a Traditional Navigable Waterway (TNW), was present within portions of the designated study area. These vegetated tidal and non-tidal wetlands would be regulated by the USACE as Section 10 and Section 404 wetlands. Typically, DNREC does not regulate non-tidal wetlands, but they regulate tidal waters and wetlands to an elevation two feet above the local mean high-water line.

## Delineation History

This wetland field delineation was performed by Landmark Science & Engineering on May 3-4, 2021 at which time jurisdictional wetland and water resources within the designated study area were flagged. This flagging was surveyed by Landmark Science & Engineering.

## Methods

This investigation used the techniques for Routine Determinations described in the 1987 USACE Wetland Delineation Manual (Y-87-1) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region. The field interpretations follow the definitions listed in the Public Notices from the Army Corp of Engineers, dated September 26, 1990, October 4, 1990, September 4, 1991, and December 2, 2008.

### Delineation Criteria

The criteria below were used to delineate the natural resources described in this report. For the purpose of Section 404 of the Clean Water Act (CWA) regulation, the term “Waters of the United States” includes open water and wetlands (see Glossary for complete definitions). For the purpose of this report and common usage, “Waters of the U.S.” refers to regulated open water areas and wetlands refers to vegetated areas that meet the wetland criteria as defined below.

### Waters of the United States

In order for an area to be classified as regulated waters of the U.S., the feature must be consistent with the definitions as listed in 33 CFR (Code of Federal Regulations) Section 328.3 and the current guidance (see Glossary). Delineation criteria for open water areas are typically the ordinary high-water mark (OHWM).

### Non-tidal and Tidal Vegetated Wetlands

In order for an area to be classified as wetlands under USACE methods, it must display: 1. Hydric Soils, 2. Hydrophytic Vegetation and 3. Indicators of Wetland Hydrology. The methodology for determining the dominant vegetation on the site was a hybridization of the methods described in the 1987 Manual and the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont, as described below.

*The diagnostic environmental characteristics of wetlands in accordance Part II, Number 26 b.(1), (2) and (3); and Number 26 c. are listed below:*

***1. Vegetation:*** The prevalent vegetation consists of macrophytes that are typically adapted to areas having hydrologic and soil conditions (as described below). Hydrophytic species, due to morphological, physiological, and/or reproductive adaptation(s), have the ability to grow, effectively compete, reproduce, and/or persist in anaerobic soil conditions.

Vegetation is classified by the U.S. Fish & Wildlife Service according to the following categories:

Obligate Wetland Plants (OBL): Plants that occur almost always (estimated probability >99%) in wetlands under natural conditions.

Facultative Wetland Plants (FACW): Plants that occur usually (estimated probability >67% to 99%) in wetlands.

Facultative Plants (FAC): Plants with a similar likelihood (estimated probability 33% to 67%) of occurring in both wetlands and uplands (non-wetlands).

Facultative Upland Plants (FACU): Plants that occur sometimes (estimated probability 1% to <33%) in wetlands.

Not Listed (NL or UPL): Plants that occur rarely (estimated probability <1%) in wetlands.

**2. Soil:** Soils are present and have been classified as hydric, or they possess characteristics that are associated with reducing soil conditions. A complete description of hydric soils can be found in the Supplement. Common hydric soil indicators include:

Organic Soil: A soil that is more than 50% organic material (peats and mucks).

Sulfidic Material: A soil that emits the odor of rotten eggs produced by sulfides formed in a reducing environment of saturated soils.

Aquic or Peraquic Moisture Regime: A soil that is permanently flooded and/or saturated close to the surface and is devoid of oxygen.

Soil Colors: Gleyed (Gray) soils and/or soils with low matrix chroma and bright mottles in the top 10-12 inches. A chroma of #2 in mottled soils or #1 in unmottled soils is considered hydric. (Colors are as defined in Munsell Color Book, 1975).

Soil on Hydric Soils List: A soil that matches the profile description for a soil type defined as hydric by the National Technical Committee on Hydric Soils (NTCHS).

Iron and/or Manganese Concretions: Segregated oxides of iron or manganese are found close to the surface (within 7.5 cm).

**3. Hydrology:** The area is inundated either permanently or periodically at mean water depths of less than or equal to 6.6 feet, or the soil is saturated to the surface at some time during the growing season of the prevalent vegetation.

Except in certain situations, evidence of a minimum of one positive wetland indicator from each parameter (vegetation, soils, and hydrology) must be found in order to make a positive wetland determination.

Wetland hydrology is indicated by drift lines, sediment deposition, watermarks, recorded well or stream gage data, visual observations, blackened leaves, or oxidized root channels with living roots.

The general guidance utilized at this time is that water must be within one foot of the surface consecutively greater than 5% of the growing season or more than 12 consecutive days during the growing season.

### **Data Collection**

The absence or presence of waters and/or wetland parameters observed throughout the subject property was recorded in standard field note books. Representative wetland and upland borings were recorded at or near the wetland or waters boundary as well as any representative areas of disagreement between this delineation and the United States Fish & Wildlife Service (USFWS), National Wetlands Inventory (NWI) map or where deemed appropriate.

The soils observed at each sample boring were exposed using a hand soil auger. These borings were made to depths of 18 inches whenever possible. Soil texture information follows the United States Department of Agriculture (USDA) classification system.

The plants recorded at each sample station follow the nomenclature of Fernald (1950) and Kartesz and Kartesz (1981) and the PLANTS Database (USDA, 2007).

Hydrological indicators follow the descriptions of the 1987 Wetland Delineation Manual and Regional Supplement to the Corps of Engineers Wetland delineation Manual: Atlantic and Gulf Coastal Plain Region. Wetland hydrology indicator nomenclature uses the system developed by Cowardin, et al. (1981) and the USFWS NWI mapping program.

### **Data Sheets**

The field analysis provided ample opportunity to express the typical conditions found in the field which determined where to place the waters and/or wetland flags as well as to document any conditions found in areas of disagreement between the delineation and the NWI or SWMP designations. Site conditions were characterized by representative samples which recorded the vegetation, apparent hydrology, and existing soil conditions. These samples were documented on the Routine Wetland Delineation Data Forms from the 1987 USACE Wetlands Delineation Manual, which are attached in the Appendix. Sample locations were estimated on the plans based on their relative location to physical features and surveyed flags.

## **Jurisdiction**

### **USACE and EPA**

#### **Section 10 Waters of the U.S. (Navigable Waters) and Tidal Wetlands**

Section 10 of the Rivers and Harbors Act (RHA) of 1899 gives the Environmental Protection Agency (EPA) and USACE (the agencies) jurisdiction over traditional navigable waters (TNW). Section 10 Waters (including wetlands) includes tidal open waters and wetlands at and below the mean high tide mark and non-tidal navigable waters and wetlands to the ordinary high-water mark (OHWM). The USACE maintains a list TNWs. These waterways include tidal and certain non-tidal waters.

## Section 404 Waters of the U.S. including Vegetated Wetlands

Waters of the United States including tidal and non-tidal vegetated wetlands are regulated by the USACE under Section 404 of the Clean Water Act. Section 404 waters (including wetlands) include tidal open waters to the high tide line, non-tidal navigable waters to the OHWM, non-navigable open water to the OHWM, and all wetlands to the wetland/upland boundary. In order to be jurisdictional, non-wetland Waters of the United States (typically referred to as just waters of the U.S.) must be consistent with the definitions listed in 33 CFR (Code of Federal Regulations) Section 328.3 and the current guidance. Non-tidal wetlands must display the three criteria (hydric soils, hydrophytic vegetation, and wetland hydrology) in order to be jurisdictional.

In accordance with guidance, the agencies will assert jurisdiction over the following waters and wetlands:

- Traditional Navigable Waters (TNWs)
- Wetlands adjacent to TNWs
- Non-navigable tributaries of TNWs that are relatively permanent (relative permanent waters - RPW) where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months.)
- Wetlands that directly abut such tributaries

The agencies will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus (see Glossary) with a TNW:

- Non-navigable tributaries that are not relatively permanent
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent
- Wetlands adjacent to, but that do not directly abut a non-navigable RPW tributary
- In addition, an USACE policy decision has been made to collect information relevant to a significant nexus evaluation for all “intermittent” non-navigable tributaries and their adjacent wetlands (i.e., even if the tributary’s flow may be relatively permanent, but is not perennial).

The agencies will **not** assert jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow)
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water

The agencies will apply the significant nexus standard as follows:

- A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of downstream TNWs.
- Significant nexus includes consideration of hydrologic or ecologic factors (see Glossary)

Geographically isolated wetlands which do not have a significant nexus connection to interstate commerce are not jurisdictional. The USACE District Office evaluates if these wetlands are isolated under the CWA if submitted for a jurisdictional determination (JD). USACE and EPA headquarters must concur with an isolated wetlands evaluation for a non-jurisdictional determination.



## State of Delaware

### State Subaqueous Lands

The State of Delaware regulates all perennial and intermittent watercourses as State Subaqueous Lands. Subaqueous Lands are water conveyances with defined banks and channels permanently or seasonally supported by groundwater, spring seeps, or surface waters in addition to precipitation and surface water runoff from storm events. Ephemeral streams are not typically considered Subaqueous Lands as they rely only on surface water runoff from storm events and are otherwise dry. A determination of the limits of regulated Subaqueous Lands is usually done on a case-by-case basis by DNREC. If Subaqueous Lands are determined to be present on the property, they will most likely be found to coincide with waters of the United States.

### Tidal Wetlands

The State of Delaware regulates those tidal wetlands indicated on the Delaware Tidal Wetland maps in accordance with the Delaware Wetlands Title 7, Part VII, Chapter 66. These areas include tidal waters and adjacent areas "...whose surface is at or below an elevation of 2 feet above local mean high water, and upon which may grow or is capable of growing..." typical tidal water hydrophytes.

## Sussex County

### Perennial and Intermittent Streams

The Code of Sussex County, Delaware, requires a 50-foot buffer zone from the ordinary high-water line of perennial non-tidal rivers and non-tidal streams. Excluded from buffer zone designations are farm ponds, tax ditches and other man-made bodies of water where these waters are not located on or within perennial streams. A buffer zone shall not be required for agricultural drainage ditches if the adjacent agricultural land is the subject of a conservation farm plan established with the Sussex Conservation District.

### Non-Tidal Vegetated Wetlands

Sussex County does not apply any additional regulations on non-tidal vegetated wetlands.

### Tidal Wetlands

The Code of Sussex County, Delaware, requires a 50-foot buffer for structures from the mean high-water line on all tidal waters, tidal tributary streams and tidal wetlands.

## Results

### General Site Description

A background review was performed in the office prior to the commencement of site work. The results of this background review are described below.

## Location

The field delineation was performed on May 3-4, 2021 within the boundaries of the designated study area located at Latitude 38.586434° North and Longitude -75.244621° West, and consisted mainly of forested areas with interspersed maintained clearings and old field areas, paved parking areas and access roads, and two existing substations. The designated study area was bordered to the north and west by Indian River, to the south by Power Plant Road, and to the east by an existing electrical substation and the Indian River Power LLC facility. See Figures 1 and 2 for details.

## Soils

The USDA Web Soil Survey document indicated the designated study area is primarily underlain with Henlopen loamy sands (HpA, HpB) and Runclint loamy sand (RuA), with lesser areas mapped as Broadkill mucky peat (Br), Manahawkin muck (Ma), Purnell peat (Pu), and Brockatonorton-Urban land complex (BuA). Henlopen loamy sands and Runclint loamy sand consist of somewhat excessively drained soils; Broadkill mucky peat, Manahawken muck, and Purnell peat consist of very poorly drained soils and are considered hydric by the Natural Technical Committee on Hydric Soils. Urban land complexes typically consist of soils that have been highly disturbed through past urbanization; Brockatonorton-Urban land complex is considered hydric when associated with beaches and tidal marshes. Runclint loamy sand may be considered hydric where it occurs in depressions. See Figure 4 for details.

## Mapped Hydrology and Topography

The designated study area drains mainly northward into Indian River; the southwestern portion drains southward into Indian Creek, a tributary to Indian River. Hydrology within the designated study area appeared to be influenced mainly by surface water runoff and from tidal influence from the adjacent Indian River and Indian Creek. Elevations within the designated study area ranged from 10 feet in the northern and western portions down to zero at Indian River to the north, west, and east according to the LiDAR-derived contours shown on Figure 5.

## Mapped Wetlands

### State and Federal Wetland Mapping

Both the Delaware State Wetlands (SWMP) map and the USFWS National Wetlands Inventory (NWI) map depicted emergent Estuarine wetlands (E2EM) in association with Indian River to the north, east, and northwest, and with Indian Creek to the south of the designated study area. In addition, both maps indicated a small palustrine forested wetland (PFO) in the eastern portion of the designated study area. See Figures 3a and 3b for details.

## Delineation Specifics

### Upland Land Use and Land Cover Types

- Old Field Areas – Large linear areas between Gate A Road and Power Plant Road in the southern portion of the study area, and just east and northeast of the 230 kV Delmarva Power substation in the east central portion of the study area consisted primarily of old field vegetation and appeared to be actively maintained. Electric lines on wooden poles and larger steel poles

traversed these old field areas and beyond. Common species observed in this old field areas included Sweet Vernal Grass, Oldfield Blackberry, Yarrow, Broomsedge, Meadow Onion, Sheep Sorrel, Woodsorrel, Narrow-leaf Plantain, Meadow Fescue, Japanese Honeysuckle, Ragwort and Thistles.

- Paved and Industrially-Developed Areas – A 230 kV Delmarva Power substation consisting of stone-paved surfaces and large electrical components was situated in the south-central portion of the designated study area. An asphalt-paved access road (Gate A Road) and a railroad traversed the southern portion of the study area. A linear stone-paved area was situated in the easternmost portion of the study area adjacent to the tidal wetlands.
- Scrub-Shrub Vegetation – Scrub-shrub vegetation was limited to the narrow upland area between the stone-paved access area and tidal wetlands in the easternmost portion of the study area. A minor component scattered throughout the designated study area consisted of scrub-shrub vegetation and saplings. Common species observed in these areas included Black Cherry, Loblolly Pine, Virginia Pine, Persimmon, Sassafras, Southern Red Oak, American Holly, Shining Sumac, Japanese Honeysuckle, Sheep Sorrel, and Broomsedge.
- Mixed Deciduous-Coniferous Forests – Much of the upland areas encountered within the study area consisted of relatively undisturbed mixed forest vegetation. Common species observed in these areas included Loblolly Pine, Virginia Pine, Southern Red Oak, Black Oak, White Oak, Water Oak, Mockernut Hickory, Bitternut Hickory, Red Maple, Black Cherry, Hackberry, Sassafras, Black Gum, Persimmon, Flowering Dogwood, American Holly, Highbush Blueberry, Lowbush Blueberry and Greenbriar.

### Line Specifications

One wetland line was placed within the designated study area as estimated during fieldwork based on physical features. The limits of the water and/or wetland features found within the study area were flagged with pink and black vinyl ribbon. This line was marked with alpha-numeric designators with letters representing the line and numbers representing the positions along the line.

Line AA originated at the easternmost end of the designated study area at the chain-link fence to the power plant. Line AA headed generally westward for ±900 feet to flag AA31 along the southern limits of a large emergent tidal wetland and narrow non-tidal wetland fringe associated with Indian River. From flag AA31, line AA continued generally westward and delineated a small emergent and forested non-tidal wetland finger. At flag AA43, Line AA circled back northward and eastward along the northern limits of the emergent and forested non-tidal wetland to flag AA55. Line AA continued briefly eastward to a point overlooking the emergent tidal wetland at flag AA58, then turned sharply northward and westward along the southern limits of the large emergent tidal wetland and narrow non-tidal wetland fringe.

At flag AA81, Line AA crossed over a 200-foot-wide power line clearing and headed westward for ±900 feet to flag AA100. From this point, Line AA continued southward and westward ±2,400 feet along the southern and eastern limits of the large emergent tidal wetland and narrow non-tidal wetland fringe to flag AA140 where the large emergent tidal wetland became significantly narrowed. At this point, Line AA turned southward for ±350 feet along the eastern bank of Indian River to flag AA146. From flag AA146, Line AA headed generally eastward along the northern limits of an emergent and scrub-shrub tidal wetland plus narrow non-tidal wetland fringe associated with Indian Creek for ±2,400 feet, ending at flag AA188 adjacent to Gate A Road.

Dominant wetland vegetation observed in the emergent tidal wetlands included Salt Marsh Cordgrass, Salt Meadow Cordgrass, Common Reed, and Groundseltree.

Dominant wetland vegetation in the non-tidal fringes included Greenbriar, Groundseltree, Arrowwood, American Holly, Highbush Blueberry, Persimmon, Water Oak, Red Maple, Atlantic White Cedar, Black Gum and Loblolly Pine

Dominant wetland vegetation in the non-tidal emergent and forested wetland area in the eastern portion of the study area between flags AA31 and AA55 included Greenbriar, Common Reed, Groundseltree, Red Maple, Black Gum, Water Oak, and Loblolly Pine.

#### **Section 404 Waters**

No non-tidal waters of the U.S. were encountered within the designated study area at the time of the investigation.

#### **State Subaqueous Lands**

Indian River and associated flats and tidal marshes along the western, northern, and northeastern borders of the designated study area, and Indian Creek and associated tidal marshes along the southern border of the study area would qualify as State Subaqueous Lands. The State determines the boundaries of their jurisdiction on a case-by-case basis.

#### **Non-tidal Vegetated Wetlands**

Non-tidal wetland conditions encountered within the designated study area at the time of the investigation consisted of a small forested and emergent wetland finger situated slightly up-gradient of the adjacent emergent tidal wetland area in the eastern portion of the designated study area between flags AA31 and AA55. Narrow vegetated non-tidal wetland fringes were encountered along much of the delineation separating the emergent tidal wetland areas from the up-gradient upland forested areas.

#### **Section 10 Waters**

Indian River along the western, northern, and northeastern boundaries, and Indian Creek along the southern boundary would be considered Section 10 Waters. These described water features are applicable to USACE Section 10 regulation. The ordinary high water line elevation was not delineated separately.

#### **Tidal Wetlands**

Tidal emergent wetlands were observed throughout the northwestern, northern and eastern portions of the designated study in association with Indian River, and in the southern portion in association with Indian Creek.

#### **Comparison to Mapped Wetlands**

Both the Delaware State Wetlands (SWMP) map and the USFWS National Wetlands Inventory (NWI) map depicted emergent Estuarine wetlands (E2EM) in association with Indian River to the

north, east, and northwest, and with Indian Creek to the south of the designated study area. In addition, both maps indicated a small palustrine forested wetland (PFO) in the eastern portion of the designated study area. The mapped wetlands appeared to be reasonably consistent with the field-located wetland boundaries.

## Conclusions

This wetland delineation within the designated study area was completed by Landmark in May 2021. One wetland line was placed along the limits of the tidal and non-tidal wetlands and wetland fringes that separated the upland areas from the Waters of the U.S. This line was surveyed and plotted by Landmark Science & Engineering and is shown on the accompanying wetland delineation plan.

This investigation was completed following the 1987 USACE Wetland Delineation Manual (Y-87-1) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (November 2010). Reference maps and site photographs from this investigation are included in the appendix of this report for review by reviewing and regulatory agencies, along with the wetland plan denoting the wetland and non-wetland features.

The sole purpose of this investigation was to identify any encountered wetland conditions and delineate the limits of Waters of the United States including wetlands, Tidal Waters, Navigable Waters, and Subaqueous Lands within the designated study area. This report contains the information necessary to accompany the JD information sheets when submitting to the USACE with a jurisdictional determination request, if necessary.

## Notes

The USACE regulates the placement of structures and fill in Section 10 Waters (below the ordinary high water mark elevation of navigable waters) and the placement of fill and/or dredge material into Waters of the U.S. including wetlands (Section 404). The placement of fill and/or dredged material has been widely interpreted by the Courts. Please consult our office prior to any work in wetlands or Waters of the U.S. No work of this nature should be performed without a JD and/or a permit from the USACE.

The State of Delaware regulates activities in Subaqueous Lands as well as State mapped tidal wetlands. No work in those areas should be performed without a permit from the State.

This investigation has been performed utilizing best professional judgment based on the site conditions encountered at the time of the investigation. The investigator is not responsible for changed conditions, either man-made or natural, which may change wetland boundaries.

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## Glossary

### Waters of the U.S. As defined by 33 CFR Part 328, Section 328.3.

#### a. Waters of the United States

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use degradation or destruction of which could affect interstate or foreign commerce including any such waters;
  - a. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
  - b. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
  - c. Which are used or could be used for industrial purposes by industries in interstate commerce;
4. All impoundments of waters otherwise defined as waters of the United States under the definition;
5. Tributaries of waters identified in paragraphs (a) (1)-(4) of this section;
6. The territorial seas;
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1)-(6) of this section.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 123.11(m) which also meet the criteria of this definition) are not waters of the United States.
8. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with the EPA.

b. The term "wetlands" means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

c. The term "adjacent" means bordering, contiguous, or neighboring. Wetlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes and the like are "adjacent wetlands."

d. The term "high tide line" means the line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

- e. The term "ordinary high-water mark" means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.
- f. The term "tidal waters" means those waters that rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by hydrologic, wind, or other effects.

Guidelines and Public Notices periodically released by the EPA and USACE refine and interpret these definitions.

#### **Navigable Waters of the U.S. As defined by 33 CFR Part 328, Section 329.4**

Navigable waters of the United States are those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. A determination of navigability, once made, applies laterally over the entire surface of the waterbody, and is not extinguished by later actions or events which impede or destroy navigable capacity.

Tabulated lists of final determinations of navigability are to be maintained in each district office, and be updated as necessitated by court decisions, jurisdictional inquiries, or other changed conditions.

#### **Traditional Navigable Water (TNW) Per US Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook, dated May 30, 2007**

Traditional navigable water currently used or that have been used in the past, or may be susceptible to use, in interstate or foreign commerce, including but not limited to tidal waters. Such waters are those referred to in as "navigable-in-fact".

#### **Non-navigable Tributaries of TNWs with Relatively Permanent Flow (RPF)**

The guidance describes the second category – non-navigable tributaries with relatively permanent flow as waters, e.g., streams, that typically flow year-round or that have continuous flow at least seasonally (typically three months) excluding ephemeral tributaries and intermittent streams.

#### **Significant Nexus Determination**

The significant nexus evaluation will combine, for analytical purposes, the tributary, and all of its adjacent wetlands, whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. A significant nexus analysis will assess the flow characteristics and functions of the relevant reach of the tributary, in combination with functions collectively performed by all wetlands (if present) adjacent to the tributary, to determine if they have more than an insubstantial or speculative effect on the chemical, physical, and biological integrity of TNWs.

Consideration will be given to the distance between the tributary and the TNW. The tributary will not be so remote as to make the effect on the TNW speculative or insubstantial. 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 a significant nexus.

Hydrologic factors will be considered, such as:

- volume, duration, and frequency of flow, including consideration of certain physical characteristics of the tributary
- proximity to the traditional navigable water
- size of the watershed
- average annual rainfall
- average annual winter snow pack

Ecologic factors will be considered, such as:

- the ability of the tributary and its adjacent wetlands (if any) to carry pollutants and flood waters to traditional navigable waters
- the ability of the tributary and its adjacent wetlands (if any) to provide aquatic habitat that supports biota of a traditional navigable water
- the ability for adjacent wetlands to trap and filter pollutants or store flood waters
- the ability to maintain water quality

Certain geographical features (e.g., ditches, canals) that transport relatively permanent (continuous at least seasonally) flow directly or indirectly into TNWs or between two (or more) waters of the U.S., including wetlands, are jurisdictional waters regulated under the CWA.

Certain geographic features (e.g., swales, ditches, pipes) may contribute to a surface hydrologic connection where the features:

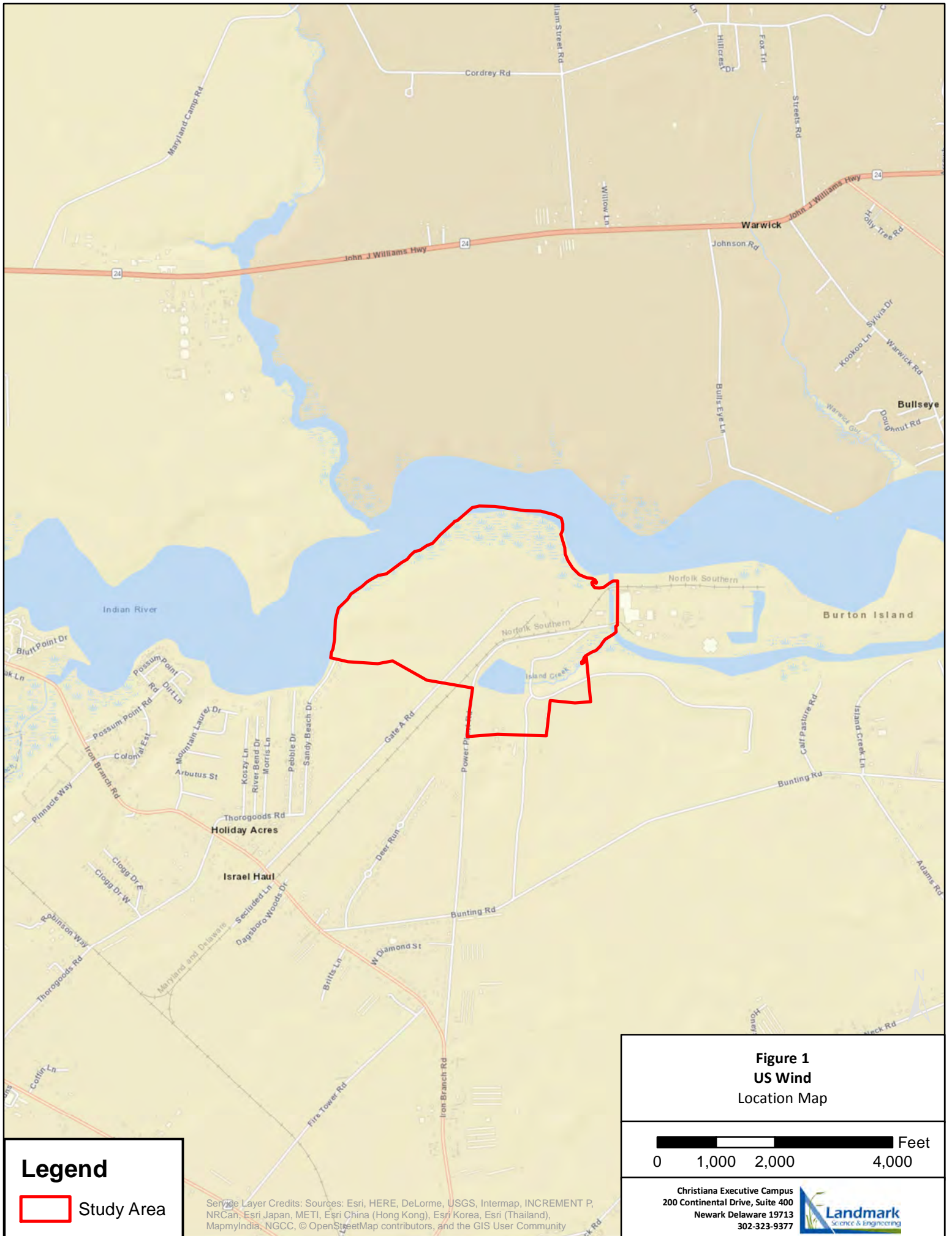
- replace or relocate a water of the U.S., or
- connect a water of the U.S. to another water of the U.S., or
- provide relatively permanent flow to a water of the U.S.

Certain geographic features generally are not jurisdictional waters:

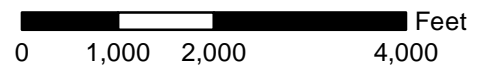
- swales, erosional features (e.g. gullies) and small washes characterized by low volume, infrequent, and short duration flow
- ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water
- uplands transporting over land flow generated from precipitation (i.e., rain events and snowmelt)

# APPENDIX


# FIGURES



**Figure 1**  
**US Wind**  
 Location Map



**Legend**

 Study Area

Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community


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 Newark Delaware 19713  
 302-323-9377








**Legend**

 Study Area

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NOAA, Earthstar

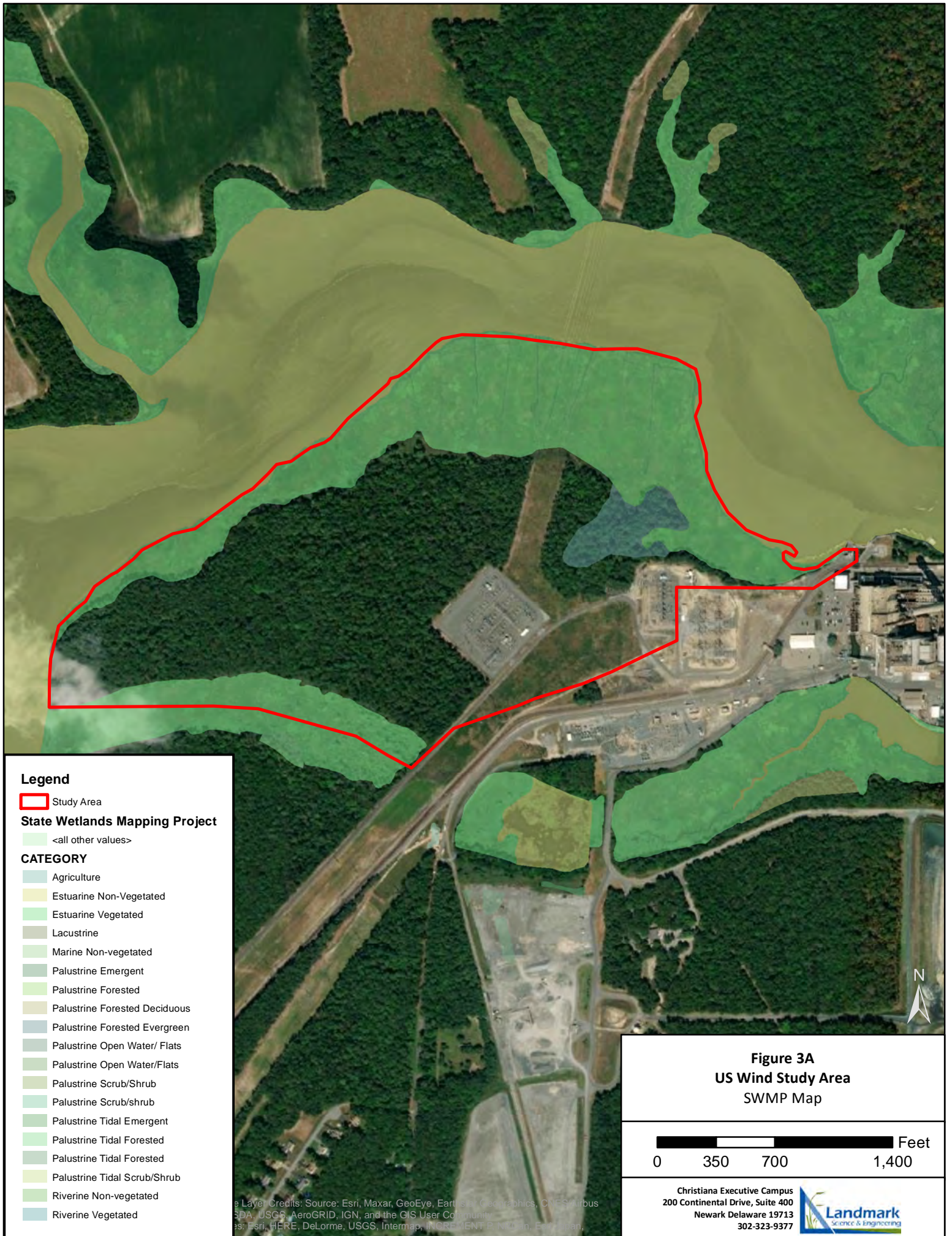
**Figure 2**  
**US Wind Study Area**  
Site Map

 Feet  
0 350 700 1,400

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200 Continental Drive, Suite 400  
Newark Delaware 19713  
302-323-9377







**Legend**

Study Area

**State Wetlands Mapping Project**

<all other values>

**CATEGORY**

- Agriculture
- Estuarine Non-Vegetated
- Estuarine Vegetated
- Lacustrine
- Marine Non-vegetated
- Palustrine Emergent
- Palustrine Forested
- Palustrine Forested Deciduous
- Palustrine Forested Evergreen
- Palustrine Open Water/ Flats
- Palustrine Open Water/Flats
- Palustrine Scrub/Shrub
- Palustrine Scrub/shrub
- Palustrine Tidal Emergent
- Palustrine Tidal Forested
- Palustrine Tidal Forested
- Palustrine Tidal Scrub/Shrub
- Riverine Non-vegetated
- Riverine Vegetated

**Figure 3A**  
**US Wind Study Area**  
 SWMP Map

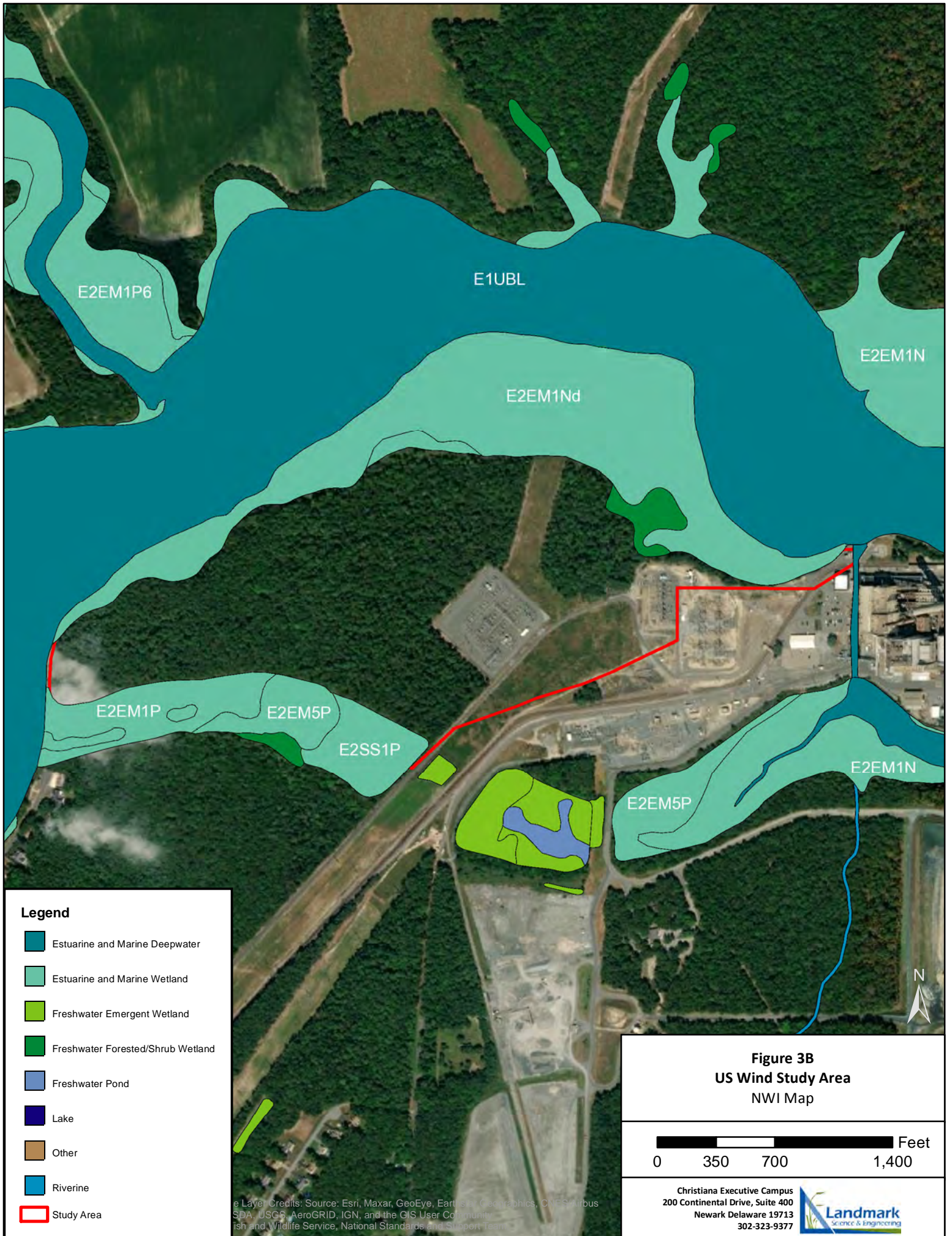
Feet  
 0 350 700 1,400

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Map Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus  
 DSD, USGS, AeroGRID, IGN, and the GIS User Community  
 Credits: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NOAA, Earthstar





**Legend**

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine
- Study Area

**Figure 3B**  
**US Wind Study Area**  
 NWI Map

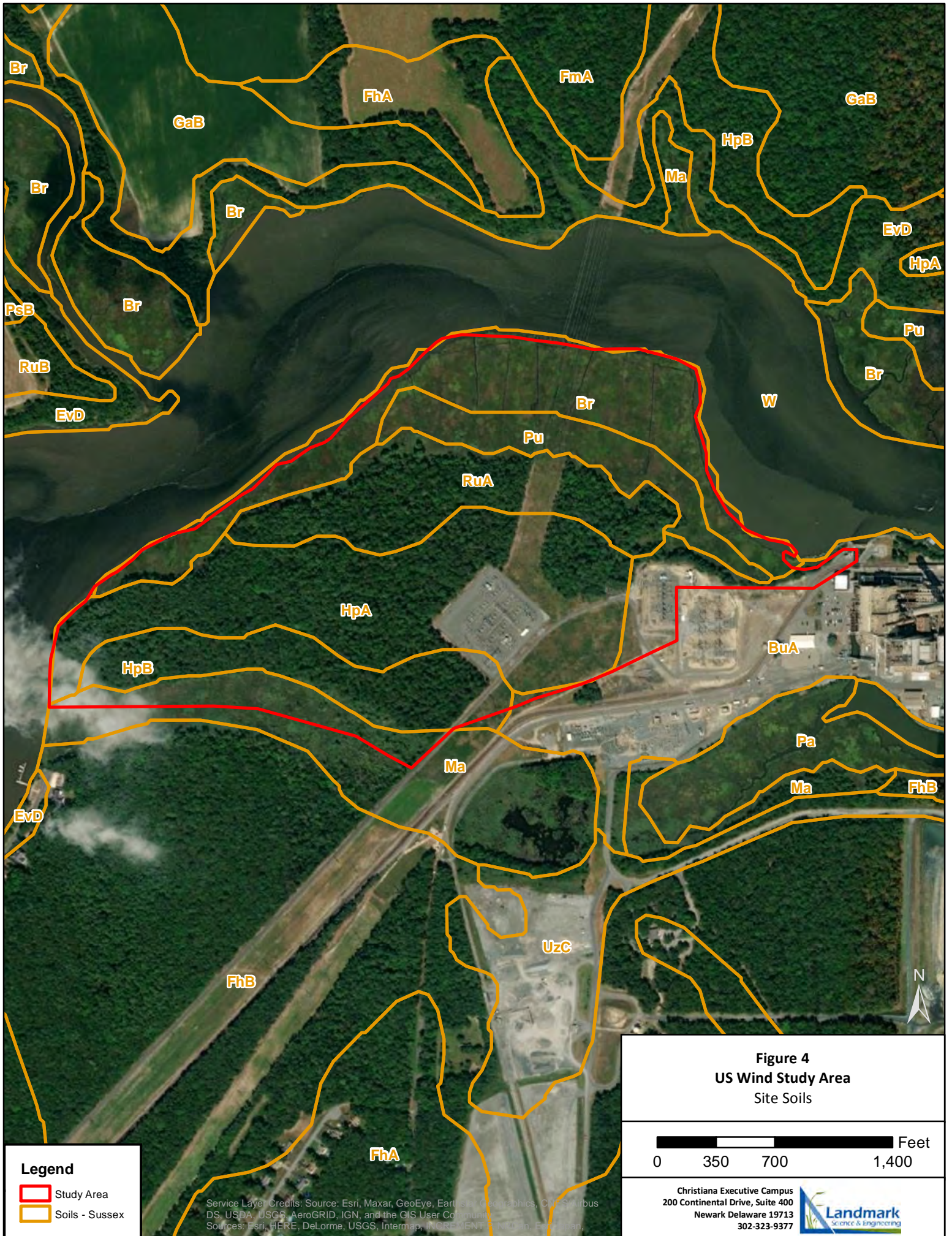
0 350 700 1,400 Feet

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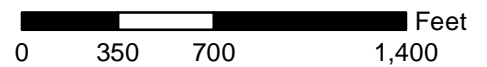


Map Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus SDA, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Fish and Wildlife Service, National Standards and Support Team





**Figure 4**  
**US Wind Study Area**  
 Site Soils



**Legend**

- Study Area
- Soils - Sussex

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NOAA, Earthstar

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# SITE PHOTOGRAPHS



LOOKING NORTH FROM EDGE OF WETLAND TOWARD INDIAN RIVER. EASTERN END OF STUDY AREA.



LOOKING NORTHEAST FROM EDGE OF WETLAND TOWARD INDIAN RIVER. EASTERN END OF STUDY AREA.



LOOKING NORTHWEST FROM EDGE OF WETLAND TOWARD INDIAN RIVER. EASTERN END OF STUDY AREA.



LOOKING NORTH FROM EDGE OF WETLAND TOWARD INDIAN RIVER. EASTERN END OF STUDY AREA.



NARROW UPLAND AREA BETWEEN FENCE AND TIDAL WETLANDS IN EASTERN END OF STUDY AREA.



NARROW UPLAND AREA BETWEEN FENCE AND TIDAL WETLANDS IN EASTERN END OF STUDY AREA.





NON-TIDAL EMERGENT AND FORESTED WETLAND AREA IN EASTERN PORTION OF STUDY AREA. UPLAND FOREST BEYOND. NEAR FLAG AA35.



NON-TIDAL EMERGENT WETLAND AREA IN EASTERN PORTION OF STUDY AREA NEAR FLAG AA33.



LOOKING SOUTHEAST FROM NON-TIDAL EMERGENT WETLAND TOWARD UPLAND FORESTED AREA. EASTERN PORTION OF STUDY AREA NEAR FLAG AA33.



UPLAND FOREST IN EAST CENTRAL PORTION OF STUDY AREA WEST OF FLAG AA43.



UPLAND FOREST ON SMALL PENINSULA IN EASTERN PORTION OF STUDY AREA NEAR FLAG AA58



UPLAND FOREST ON SMALL PENINSULA IN EASTERN PORTION OF STUDY AREA NEAR FLAG AA58.





UPLAND MIXED FOREST IN EAST CENTRAL PORTION OF STUDY AREA. POWER LINE CLEARING IN DISTANCE.



UPLAND MIXED FOREST IN EAST CENTRAL PORTION OF STUDY AREA.



LOOKING NORTH FROM UPLAND EDGE IN POWER LINE CLEARING ACROSS INDIAN RIVER. EAST CENTRAL PORTION OF STUDY AREA NEAR FLAG 81AA.



UPLAND MIXED FOREST IN EAST CENTRAL PORTION OF STUDY AREA.



LOOKING NORTH TOWARD POWER LINE CLEARING IN EAST CENTRAL PORTION OF STUDY AREA.



LOOKING EAST ACROSS OLD FIELD AREA TOWARD POWER PLANT FROM POWER LINE CLEARING IN EAST CENTRAL PORTION OF STUDY AREA.





UPLAND FOREST NEAR DATA POINT 7 JUST NORTH OF EXISTING DPL SUBSTATION. CENTRAL PORTION OF STUDY AREA.



UPLAND FOREST NEAR DATA POINT 7 JUST NORTH OF EXISTING DPL SUBSTATION. CENTRAL PORTION OF STUDY AREA.



UPLAND FOREST NEAR DATA POINT 8 JUST NORTHWEST OF EXISTING DPL SUBSTATION. CENTRAL PORTION OF STUDY AREA.



UPLAND FOREST NEAR DATA POINT 8 JUST NORTHWEST OF EXISTING DPL SUBSTATION. CENTRAL PORTION OF STUDY AREA.



UPLAND FOREST NEAR DATA POINT 9 JUST WEST OF EXISTING DPL SUBSTATION. CENTRAL PORTION OF STUDY AREA.



UPLAND FOREST SOUTHWEST OF EXISTING DPL SUBSTATION EAST OF FLAG 184AA.





UPLAND FOREST NEAR FLAG 113AA. NORTHERN PORTION OF STUDY AREA.



NON-TIDAL WETLAND EDGE NEAR FLAG 113AA WITH TIDAL WETLANDS BEYOND. INDIAN RIVER IN DISTANCE.



UPLAND FOREST NEAR FLAG AA116. NORTHERN PORTION OF STUDY AREA.



NON-TIDAL WETLAND EDGE NEAR FLAG AA125 WITH TIDAL WETLANDS BEYOND. INDIAN RIVER IN DISTANCE



LOOKING NORTHWEST ACROSS TIDAL WETLANDS NEAR FLAG AA125. INDIAN RIVER BEYOND. NORTHWESTERN PORTION OF STUDY AREA.



LOOKING NORTHEAST ACROSS TIDAL WETLANDS NEAR FLAG AA125. INDIAN RIVER BEYOND. NORTHWESTERN PORTION OF STUDY AREA.





LOOKING WEST FROM NORTHWESTERN CORNER OF STUDY AREA ACROSS INDIAN RIVER NEAR FLAG 140AA.



LARGE BLACKJACK OAK TREE ON RIVERBANK NEAR WESTERN EDGE OF STUDY AREA NEAR FLAG 142AA



EMERGENT TIDAL WETLAND AREA NEAR FLAG AA160 IN WESTERN PORTION OF STUDY AREA.



EMERGENT TIDAL WETLAND AREA NEAR FLAG AA160 IN WESTERN PORTION OF STUDY AREA.



LOOKING EAST ALONG GATE A ROAD IN SOUTHWESTERN PORTION OF STUDY AREA. OLD FIELD AREAS AT RIGHT.



LOOKING SOUTHWEST FROM GATE A ROAD IN SOUTHWESTERN PORTION OF STUDY AREA. OLD FIELD AREAS AT LEFT.



# DATA SHEETS

## WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Proposed 230kV USW Substation Site		City/County: Sussex County		Sampling Date: 05-03-21
Applicant/Owner: US Wind			State: Delaware	Sampling Point: DP1
Investigators: Craig Smith			Section/Township:	
Landform: Plain		Local relief: Flat	% Slope: 1%	
Subregion: MLRA 153D	Lat: 38.5868°N	Long: -75.2363°W	Datum:	
Soil Map Unit Name: Brockatonorton-Urban land complex (BuA)				NWI Classification: UPL
Are climatic/hydrologic conditions on the site typical for this time of year?				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Is vegetation <input type="checkbox"/> soil <input type="checkbox"/> or hydrology <input type="checkbox"/> significantly disturbed?			Are "Normal Circumstances" present?	
Is vegetation <input type="checkbox"/> soil <input type="checkbox"/> or hydrology <input type="checkbox"/> naturally problematic?			Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

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

Hydrophytic vegetation present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric soil present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

Remarks: Area appeared to have been historically disturbed

### HYDROLOGY

#### Wetland Hydrology Indicators:

Primary indicators (minimum of one is required; check all that apply)	Secondary indicators (minimum of two required)
<input type="checkbox"/> Surface water (A1)	<input type="checkbox"/> Surface soil cracks (B6)
<input type="checkbox"/> High water table (A2)	<input type="checkbox"/> Sparsely vegetated concave surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage patterns (B10)
<input type="checkbox"/> Water marks (B1)	<input type="checkbox"/> Moss trim lines (B16)
<input type="checkbox"/> Sediment deposits (B2)	<input type="checkbox"/> Dry-season water table (C2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Crayfish burrows (C8)
<input type="checkbox"/> Algal mat or crust (B4)	<input type="checkbox"/> Saturation visible on aerial photos (C9)
<input type="checkbox"/> Iron deposits (B5)	<input type="checkbox"/> Geomorphic position (D2)
<input type="checkbox"/> Inundation visible on aerial photos (B7)	<input type="checkbox"/> Shallow aquitard (D3)
<input type="checkbox"/> Water-stained leaves (B9)	<input type="checkbox"/> FAC-neutral test (D5)
<input type="checkbox"/> Aquatic fauna (B13)	
<input type="checkbox"/> Marl deposits (B15) (LRR U)	
<input type="checkbox"/> Hydrogen sulfide odor (C1)	
<input type="checkbox"/> Oxidized rhizospheres on living roots (C3)	
<input type="checkbox"/> Presence of reduced iron (C4)	
<input type="checkbox"/> Recent iron reduction in tilled soils (C4)	
<input type="checkbox"/> Thick muck surface (C7)	
<input type="checkbox"/> Other (explain in remarks)	

#### Field Observations:

Surface water present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	<b>Is Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water table present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	
Saturation present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	
(includes capillary fringe)				

Describe recorded data (stream gage, monitoring well, aerial photos, previous inspections) if available:

Remarks: Area is a narrow scrub-shrub upland between stone-paved areas and tidal emergent wetlands

VEGETATION - Use scientific names		Absolute	Dominant	Indicator	Sampling Point: DP1			
<u>Tree Stratum</u>	Plot size:	% Cover	Species?	Status	<b>Dominance Test Worksheet</b>			
<i>Quercus nigra</i>		20	Y	FAC	Number of OBL, FACW and FAC species:		6	
<i>Acer rubrum</i>		20	Y	FAC	Total number of all dominant species:		8	
					% of OBL, FACW and FAC dominant species:		75	
					<b>Prevalence Index Worksheet</b>			
					Total % cover	Multiplier	B-value	
					OBL species	0	1	0
					FACW species	1	2	2
		40	Total Cover		FAC species	97	3	291
<u>Sapling Stratum</u>	Plot size:				FACU species	36	4	144
<i>Quercus nigra</i>		30	Y	FAC	UPL species	0	5	0
<i>Quercus falcata</i>		20	Y	FACU	Column total	134		437
<i>Pinus taeda</i>		5	N	FAC	<b>Prevalence Index:</b>		3.26	
					<b>Hydrophytic Vegetation Indicators</b>			
					<input checked="" type="checkbox"/>	Dominance test is > 50%		
					<input type="checkbox"/>	Prevalence index is ≤ 3.0		
					<input type="checkbox"/>	Problematic hydrophytic vegetation		
		55	Total Cover		Explanation of problematic vegetation: Area is maintained as a power line easement			
<u>Shrub Stratum</u>	Plot size:				<b>Definitions of vegetation strata:</b>			
<i>Ilex opaca</i>		5	Y	FAC	<b>Tree</b> - Woody plants, excluding woody vines, approx. 20 feet (6 m) or more in height and 3 inches (7.6 cm) or larger in diameter at breast height (DBH).			
<i>Baccharis halimifolia</i>		5	Y	FAC	<b>Sapling</b> - Woody plants, excluding woody vines, approx. 20 feet (6 m) or more in height and less than 3 inches (7.6 cm) DBH.			
					<b>Shrub</b> - Woody plants, excluding woody vines, approx. 3 to 20 feet (1 to 6 m) in height.			
<u>Herb Stratum</u>	Plot size:				<b>Herb</b> - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 feet (1 m) in height.			
<i>Festuca rubra</i>		10	Y	FACU	<b>Woody Vine</b> - All woody vines, regardless of height.			
<i>Andropogon virginicus</i>		10	Y	FAC	Remarks: (If observed, list morphological adaptations)			
<i>Prunus serotina</i>		5	N	FACU				
<i>Panicum clandestinum</i>		1	N	FACW				
<i>Juncus tenuis</i>		1	N	FAC				
<i>Smilax rotundifolia</i>		1	N	FAC				
<i>Parthenocissus quinquefolia</i>		1	N	FACU				
		29	Total cover					
<u>Woody Vine Stratum</u>	Plot size:				<b>Is Hydrophytic Vegetation Present?</b>			
					Yes	<input type="checkbox"/>		
					No	<input checked="" type="checkbox"/>		
		0	Total cover					

SOIL							Sampling Point: DP1						
Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)													
Depth (inches)	Matrix		Redox Features				Texture	Remarks					
	Color (moist)	%	Color (moist)	%	Type	Loc							
0-3	10YR 4/2	100	10YR 6/1	5	C	M	Sd Lo						
3-8	10YR 4/4	85	10YR 5/3 & 4/2	15	C	M	Lo Sd						
8-18	10YR 4/4	85	10YR 4/2 & 5/6	15	C	M	Lo Sd						
Types: C-concentration, D-depletion, RM-reduced matrix, CS covered or coated sand grains.							Locations: PL-pore lining, M-matrix						
Hydric Soil Indicators:					Indicators for Problematic Hydric Soils:								
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic epipedon (A2) <input type="checkbox"/> Black histic (A3) <input type="checkbox"/> Hydrogen sulfide (A4) <input type="checkbox"/> Stratified layers (A5) <input type="checkbox"/> Organic bodies (A6)(LRR P, T, U) <input type="checkbox"/> 5 cm mucky mineral (A7)(LRR U) <input type="checkbox"/> Muck presence (A8)(LRR U) <input type="checkbox"/> 1 cm muck (A9) (LRR P, T) <input type="checkbox"/> Depleted below dark surface (A11) <input type="checkbox"/> Thick dark surface (A12) <input type="checkbox"/> Coast prairie redox (A16)(MLRA 150A) <input type="checkbox"/> Sandy mucky mineral (S1)(LRR O, S) <input type="checkbox"/> Sandy gleyed matrix (S4) <input type="checkbox"/> Sandy redox (S5) <input type="checkbox"/> Stripped matrix (S6) <input type="checkbox"/> Dark surface (S7)(LRR P, S, T, U)					<input type="checkbox"/> Polyvalue below surface (S8)(LRR S, T, U) <input type="checkbox"/> Thin dark surface (S9)(LRR S, T, U) <input type="checkbox"/> Loamy mucky mineral (F1)(LRR O) <input type="checkbox"/> Loamy gleyed matrix (F2) <input type="checkbox"/> Depleted matrix (F3) <input type="checkbox"/> Redox dark surface (F6) <input type="checkbox"/> Depleted dark surface (F7) <input type="checkbox"/> Redox depressions (F8) <input type="checkbox"/> Marl (F10)(LRR U) <input type="checkbox"/> Depleted ochric (F11)(MLRA 151) <input type="checkbox"/> Fe-Mn masses (F12)(LRR O, P, T) <input type="checkbox"/> Umbric surface (F13)(LRR P, T, U) <input type="checkbox"/> Delta ochric (F17)(MLRA 151) <input type="checkbox"/> Reduced vertic (F18)(MLRA 150A, 150B) <input type="checkbox"/> Piedmont floodplain soils (F19)(MLRA 149A) <input type="checkbox"/> Anomalous bright loamy soils (F20) (MLRA 149A, 153C, 153D)					<input type="checkbox"/> 1 cm muck (A9)(LRR O) <input type="checkbox"/> 2 cm muck (A10)(LRR S) <input type="checkbox"/> Reduced vertic (F18) (outside MLRA 150A, B) <input type="checkbox"/> Piedmont floodplain soils (F19) (LRR P, S, T) <input type="checkbox"/> Anomalous bright loamy soils (F20) (MLRA 153B) <input type="checkbox"/> Red parent material (TF2) <input type="checkbox"/> Very shallow dark surface (TF12) (LRR T, U) <input type="checkbox"/> Other (explain in remarks)			
Restrictive Layer (if observed): Type: Depth (inches):					<b>Is Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>								
Remarks: Soil appeared to have been historically disturbed and may have been old fill													

## WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Proposed 230kV USW Substation Site		City/County: Sussex County		Sampling Date: 05-03-21
Applicant/Owner: US Wind			State: Delaware	Sampling Point: DP2
Investigators: Craig Smith			Section/Township:	
Landform: Plain		Local relief: Flat	% Slope: 2-3%	
Subregion: MLRA 153D	Lat: 38.5867°N	Long: -75.2405°W	Datum:	
Soil Map Unit Name: Brockatonorton-Urban land complex (BuA)				NWI Classification: UPL
Are climatic/hydrologic conditions on the site typical for this time of year?				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Is vegetation <input type="checkbox"/> soil <input type="checkbox"/> or hydrology <input type="checkbox"/> significantly disturbed?			Are "Normal Circumstances" present?	
Is vegetation <input type="checkbox"/> soil <input type="checkbox"/> or hydrology <input type="checkbox"/> naturally problematic?			Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

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

Hydrophytic vegetation present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric soil present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

Remarks:

### HYDROLOGY

#### Wetland Hydrology Indicators:

Primary indicators (minimum of one is required; check all that apply)	Secondary indicators (minimum of two required)
<input type="checkbox"/> Surface water (A1)	<input type="checkbox"/> Surface soil cracks (B6)
<input type="checkbox"/> High water table (A2)	<input type="checkbox"/> Sparsely vegetated concave surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage patterns (B10)
<input type="checkbox"/> Water marks (B1)	<input type="checkbox"/> Moss trim lines (B16)
<input type="checkbox"/> Sediment deposits (B2)	<input type="checkbox"/> Dry-season water table (C2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Crayfish burrows (C8)
<input type="checkbox"/> Algal mat or crust (B4)	<input type="checkbox"/> Saturation visible on aerial photos (C9)
<input type="checkbox"/> Iron deposits (B5)	<input type="checkbox"/> Geomorphic position (D2)
<input type="checkbox"/> Inundation visible on aerial photos (B7)	<input type="checkbox"/> Shallow aquitard (D3)
<input type="checkbox"/> Water-stained leaves (B9)	<input type="checkbox"/> FAC-neutral test (D5)
<input type="checkbox"/> Aquatic fauna (B13)	
<input type="checkbox"/> Marl deposits (B15) (LRR U)	
<input type="checkbox"/> Hydrogen sulfide odor (C1)	
<input type="checkbox"/> Oxidized rhizospheres on living roots (C3)	
<input type="checkbox"/> Presence of reduced iron (C4)	
<input type="checkbox"/> Recent iron reduction in tilled soils (C4)	
<input type="checkbox"/> Thick muck surface (C7)	
<input type="checkbox"/> Other (explain in remarks)	

#### Field Observations:

Surface water present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	<b>Is Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water table present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	
Saturation present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	
(includes capillary fringe)				

Describe recorded data (stream gage, monitoring well, aerial photos, previous inspections) if available:

Remarks: Area is a forested upland adjacent to a non-tidal emergent and scrub-shrub wetland

VEGETATION - Use scientific names		Absolute	Dominant	Indicator	Sampling Point: DP2		
<u>Tree Stratum</u>	Plot size:	% Cover	Species?	Status	<b>Dominance Test Worksheet</b>		
<i>Pinus taeda</i>		30	Y	FAC	Number of OBL, FACW and FAC species:		6
<i>Quercus nigra</i>		10	Y	FAC	Total number of all dominant species:		8
<i>Quercus alba</i>		10	Y	FACU	<b>% of OBL, FACW and FAC dominant species:</b>		75
<i>Quercus falcata</i>		5	N	FACU	<b>Prevalence Index Worksheet</b>		
<i>Quercus velutina</i>		5	N	UPL	Total % cover	Multiplier	B-value
<i>Pinus virginiana</i>		5	N	UPL	OBL species	0	1 0
					FACW species	0	2 0
		65	Total Cover		FAC species	118	3 354
<u>Sapling Stratum</u>	Plot size:				FACU species	25	4 100
<i>Prunus serotina</i>		10	Y	FACU	UPL species	10	5 50
<i>Acer rubrum</i>		10	Y	FAC	Column total	153	504
<i>Pinus taeda</i>		5	N	FAC	<b>Prevalence Index:</b>		3.29
					<b>Hydrophytic Vegetation Indicators</b>		
					<input checked="" type="checkbox"/>	Dominance test is > 50%	
					<input type="checkbox"/>	Prevalence index is ≤ 3.0	
					<input type="checkbox"/>	Problematic hydrophytic vegetation	
		25	Total Cover		Explanation of problematic vegetation: Area is maintained as a power line easement		
<u>Shrub Stratum</u>	Plot size:				<b>Definitions of vegetation strata:</b>		
					<b>Tree</b> - Woody plants, excluding woody vines, approx. 20 feet (6 m) or more in height and 3 inches (7.6 cm) or larger in diameter at breast height (DBH).		
					<b>Sapling</b> - Woody plants, excluding woody vines, approx. 20 feet (6 m) or more in height and less than 3 inches (7.6 cm) DBH.		
		0	Total Cover		<b>Shrub</b> - Woody plants, excluding woody vines, approx. 3 to 20 feet (1 to 6 m) in height.		
<u>Herb Stratum</u>	Plot size:				<b>Herb</b> - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 feet (1 m) in height.		
<i>Smilax rotundifolia</i>		35	Y	FAC	<b>Woody Vine</b> - All woody vines, regardless of height.		
<i>Quercus nigra</i>		1	Y	FAC	Remarks: (If observed, list morphological adaptations)		
<i>Acer rubrum</i>		1	N	FAC			
<i>Ilex opaca</i>		1	N	FAC			
		38	Total cover				
<u>Woody Vine Stratum</u>	Plot size:				<b>Is Hydrophytic Vegetation Present?</b>		
<i>Smilax rotundifolia</i>		25	Y	FAC	Yes	<input type="checkbox"/>	
					No	<input checked="" type="checkbox"/>	
		25	Total cover				

SOIL							Sampling Point: DP2	
Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type	Loc		
0-1	10YR 2/2	100					Sd Lo	High organic content
1-6	10YR 5/1	90	10YR 6/1	10	C	M	Lo Sd	
6-15	10YR 4/4	90	10YR 4/6	10	C	M	Lo Sd	
15-18	10YR 4/6	90	10YR 4/4	10	C	M	Lo Sd	
Types: C-concentration, D-depletion, RM-reduced matrix, CS covered or coated sand grains.							Locations: PL-pore lining, M-matrix	
Hydric Soil Indicators:					Indicators for Problematic Hydric Soils:			
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic epipedon (A2) <input type="checkbox"/> Black histic (A3) <input type="checkbox"/> Hydrogen sulfide (A4) <input type="checkbox"/> Stratified layers (A5) <input type="checkbox"/> Organic bodies (A6)(LRR P, T, U) <input type="checkbox"/> 5 cm mucky mineral (A7)(LRR U) <input type="checkbox"/> Muck presence (A8)(LRR U) <input type="checkbox"/> 1 cm muck (A9) (LRR P, T) <input type="checkbox"/> Depleted below dark surface (A11) <input type="checkbox"/> Thick dark surface (A12) <input type="checkbox"/> Coast prairie redox (A16)(MLRA 150A) <input type="checkbox"/> Sandy mucky mineral (S1)(LRR O, S) <input type="checkbox"/> Sandy gleyed matrix (S4) <input type="checkbox"/> Sandy redox (S5) <input type="checkbox"/> Stripped matrix (S6) <input type="checkbox"/> Dark surface (S7)(LRR P, S, T, U)		<input type="checkbox"/> Polyvalue below surface (S8)(LRR S, T, U) <input type="checkbox"/> Thin dark surface (S9)(LRR S, T, U) <input type="checkbox"/> Loamy mucky mineral (F1)(LRR O) <input type="checkbox"/> Loamy gleyed matrix (F2) <input type="checkbox"/> Depleted matrix (F3) <input type="checkbox"/> Redox dark surface (F6) <input type="checkbox"/> Depleted dark surface (F7) <input type="checkbox"/> Redox depressions (F8) <input type="checkbox"/> Marl (F10)(LRR U) <input type="checkbox"/> Depleted ochric (F11)(MLRA 151) <input type="checkbox"/> Fe-Mn masses (F12)(LRR O, P, T) <input type="checkbox"/> Umbric surface (F13)(LRR P, T, U) <input type="checkbox"/> Delta ochric (F17)(MLRA 151) <input type="checkbox"/> Reduced vertic (F18)(MLRA 150A, 150B) <input type="checkbox"/> Piedmont floodplain soils (F19)(MLRA 149A) <input type="checkbox"/> Anomalous bright loamy soils (F20) (MLRA 149A, 153C, 153D)		<input type="checkbox"/> 1 cm muck (A9)(LRR O) <input type="checkbox"/> 2 cm muck (A10)(LRR S) <input type="checkbox"/> Reduced vertic (F18) (outside MLRA 150A, B) <input type="checkbox"/> Piedmont floodplain soils (F19) (LRR P, S, T) <input type="checkbox"/> Anomalous bright loamy soils (F20) (MLRA 153B) <input type="checkbox"/> Red parent material (TF2) <input type="checkbox"/> Very shallow dark surface (TF12) (LRR T, U) <input type="checkbox"/> Other (explain in remarks)				
Restrictive Layer (if observed): Type: Depth (inches):					<b>Is Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Remarks:								

## WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Proposed 230kV USW Substation Site		City/County: Sussex County		Sampling Date: 05-03-21
Applicant/Owner: US Wind			State: Delaware	Sampling Point: DP3
Investigators: Craig Smith			Section/Township:	
Landform: Plain		Local relief: Flat	% Slope: 0%	
Subregion: MLRA 153D	Lat: 38.5869°N	Long: -75.2405°W	Datum:	
Soil Map Unit Name: Runclint loamy sand (RuA)				NWI Classification: PEM/PSS

Are climatic/hydrologic conditions on the site typical for this time of year?		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Is vegetation <input type="checkbox"/> soil <input type="checkbox"/> or hydrology <input type="checkbox"/> significantly disturbed?		Are "Normal Circumstances" present?	
Is vegetation <input type="checkbox"/> soil <input type="checkbox"/> or hydrology <input type="checkbox"/> naturally problematic?		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

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

Hydrophytic vegetation present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric soil present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

Remarks:

## HYDROLOGY

### Wetland Hydrology Indicators:

Primary indicators (minimum of one is required; check all that apply)	Secondary indicators (minimum of two required)
<input type="checkbox"/> Surface water (A1)	<input type="checkbox"/> Surface soil cracks (B6)
<input checked="" type="checkbox"/> High water table (A2)	<input type="checkbox"/> Sparsely vegetated concave surface (B8)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage patterns (B10)
<input type="checkbox"/> Water marks (B1)	<input type="checkbox"/> Moss trim lines (B16)
<input type="checkbox"/> Sediment deposits (B2)	<input type="checkbox"/> Dry-season water table (C2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Crayfish burrows (C8)
<input type="checkbox"/> Algal mat or crust (B4)	<input type="checkbox"/> Saturation visible on aerial photos (C9)
<input type="checkbox"/> Iron deposits (B5)	<input checked="" type="checkbox"/> Geomorphic position (D2)
<input type="checkbox"/> Inundation visible on aerial photos (B7)	<input type="checkbox"/> Shallow aquitard (D3)
<input type="checkbox"/> Water-stained leaves (B9)	<input checked="" type="checkbox"/> FAC-neutral test (D5)
<input type="checkbox"/> Aquatic fauna (B13)	
<input type="checkbox"/> Marl deposits (B15) (LRR U)	
<input type="checkbox"/> Hydrogen sulfide odor (C1)	
<input type="checkbox"/> Oxidized rhizospheres on living roots (C3)	
<input type="checkbox"/> Presence of reduced iron (C4)	
<input type="checkbox"/> Recent iron reduction in tilled soils (C4)	
<input type="checkbox"/> Thick muck surface (C7)	
<input type="checkbox"/> Other (explain in remarks)	

### Field Observations:

Surface water present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	<b>Is Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water table present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Depth (inches) 2	
Saturation present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Depth (inches) 16	

Describe recorded data (stream gage, monitoring well, aerial photos, previous inspections) if available:

Remarks: Area is a shallow depression between two upland forested areas, adjacent to a large tidal marsh



VEGETATION - Use scientific names		Absolute	Dominant	Indicator	Sampling Point: DP3			
<u>Tree Stratum</u>	Plot size:	% Cover	Species?	Status	<b>Dominance Test Worksheet</b>			
<i>Pinus taeda</i>		25	Y	FAC	Number of OBL, FACW and FAC species:		6	
<i>Nyssa sylvatica</i>		5	N	FAC	Total number of all dominant species:		6	
					<b>% of OBL, FACW and FAC dominant species:</b>		100	
					<b>Prevalence Index Worksheet</b>			
					Total % cover	Multiplier	B-value	
					OBL species	0	1	0
					FACW species	65	2	130
					FAC species	66	3	198
		30	Total Cover		FACU species	0	4	0
<u>Sapling Stratum</u>	Plot size:				UPL species	0	5	0
<i>Acer rubrum</i>		5	Y	FAC	Column total	131		328
<i>Nyssa sylvatica</i>		5	Y	FAC	<b>Prevalence Index:</b>		2.50	
					<b>Hydrophytic Vegetation Indicators</b>			
					<input checked="" type="checkbox"/>	Dominance test is > 50%		
					<input checked="" type="checkbox"/>	Prevalence index is ≤ 3.0		
					<input type="checkbox"/>	Problematic hydrophytic vegetation		
		10	Total Cover		Explanation of problematic vegetation: Area is maintained as a power line easement			
<u>Shrub Stratum</u>	Plot size:				<b>Definitions of vegetation strata:</b>			
<i>Baccharis halimifolia</i>		20	Y	FAC	<b>Tree</b> - Woody plants, excluding woody vines, approx. 20 feet (6 m) or more in height and 3 inches (7.6 cm) or larger in diameter at breast height (DBH).			
					<b>Sapling</b> - Woody plants, excluding woody vines, approx. 20 feet (6 m) or more in height and less than 3 inches (7.6 cm) DBH.			
					<b>Shrub</b> - Woody plants, excluding woody vines, approx. 3 to 20 feet (1 to 6 m) in height.			
		20	Total Cover		<b>Herb</b> - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 feet (1 m) in height.			
<u>Herb Stratum</u>	Plot size:				<b>Woody Vine</b> - All woody vines, regardless of height.			
<i>Phragmites australis</i>		35	Y	FACW	Remarks: (If observed, list morphological adaptations)			
<i>Teucrium canadense</i>		30	Y	FACW				
<i>Smilax rotundifolia</i>		5	N	FAC				
<i>Toxicodendron radicans</i>		1	N	FAC				
		71	Total cover					
<u>Woody Vine Stratum</u>	Plot size:				<b>Is Hydrophytic Vegetation Present?</b>			
					Yes	<input checked="" type="checkbox"/>		
					No	<input type="checkbox"/>		
		0	Total cover					

SOIL							Sampling Point: DP3	
Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type	Loc		
0-1	10YR 2/1	100					Lo Sd	High organic content
1-4	10YR 4/1	90	10YR 5/1	10	C	M	Lo Sd	
4-18	10YR 4/3	85	10YR 4/4 & 5/3	15	C	M	Lo Sd	
Types: C-concentration, D-depletion, RM-reduced matrix, CS covered or coated sand grains.							Locations: PL-pore lining, M-matrix	
Hydric Soil Indicators:					Indicators for Problematic Hydric Soils:			
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic epipedon (A2) <input type="checkbox"/> Black histic (A3) <input type="checkbox"/> Hydrogen sulfide (A4) <input type="checkbox"/> Stratified layers (A5) <input type="checkbox"/> Organic bodies (A6)(LRR P, T, U) <input type="checkbox"/> 5 cm mucky mineral (A7)(LRR U) <input type="checkbox"/> Muck presence (A8)(LRR U) <input type="checkbox"/> 1 cm muck (A9) (LRR P, T) <input type="checkbox"/> Depleted below dark surface (A11) <input type="checkbox"/> Thick dark surface (A12) <input type="checkbox"/> Coast prairie redox (A16)(MLRA 150A) <input type="checkbox"/> Sandy mucky mineral (S1)(LRR O, S) <input type="checkbox"/> Sandy gleyed matrix (S4) <input type="checkbox"/> Sandy redox (S5) <input type="checkbox"/> Stripped matrix (S6) <input checked="" type="checkbox"/> Dark surface (S7)(LRR P, S, T, U)		<input type="checkbox"/> Polyvalue below surface (S8)(LRR S, T, U) <input type="checkbox"/> Thin dark surface (S9)(LRR S, T, U) <input type="checkbox"/> Loamy mucky mineral (F1)(LRR O) <input type="checkbox"/> Loamy gleyed matrix (F2) <input type="checkbox"/> Depleted matrix (F3) <input type="checkbox"/> Redox dark surface (F6) <input type="checkbox"/> Depleted dark surface (F7) <input type="checkbox"/> Redox depressions (F8) <input type="checkbox"/> Marl (F10)(LRR U) <input type="checkbox"/> Depleted ochric (F11)(MLRA 151) <input type="checkbox"/> Fe-Mn masses (F12)(LRR O, P, T) <input type="checkbox"/> Umbric surface (F13)(LRR P, T, U) <input type="checkbox"/> Delta ochric (F17)(MLRA 151) <input type="checkbox"/> Reduced vertic (F18)(MLRA 150A, 150B) <input type="checkbox"/> Piedmont floodplain soils (F19)(MLRA 149A) <input type="checkbox"/> Anomalous bright loamy soils (F20) (MLRA 149A, 153C, 153D)		<input type="checkbox"/> 1 cm muck (A9)(LRR O) <input type="checkbox"/> 2 cm muck (A10)(LRR S) <input type="checkbox"/> Reduced vertic (F18) (outside MLRA 150A, B) <input type="checkbox"/> Piedmont floodplain soils (F19) (LRR P, S, T) <input type="checkbox"/> Anomalous bright loamy soils (F20) (MLRA 153B) <input type="checkbox"/> Red parent material (TF2) <input type="checkbox"/> Very shallow dark surface (TF12) (LRR T, U) <input type="checkbox"/> Other (explain in remarks)				
Restrictive Layer (if observed): Type: Depth (inches):					<b>Is Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Remarks:								

## WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Proposed 230kV USW Substation Site		City/County: Sussex County		Sampling Date: 05-03-21
Applicant/Owner: US Wind			State: Delaware	Sampling Point: DP4
Investigators: Craig Smith			Section/Township:	
Landform: Plain		Local relief: Flat	% Slope: 1%	
Subregion: MLRA 153D	Lat: 38.5867°N	Long: -75.2419°W	Datum:	
Soil Map Unit Name: Henlopen loamy sand (HpA)				NWI Classification: UPL
Are climatic/hydrologic conditions on the site typical for this time of year?				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Is vegetation <input type="checkbox"/> soil <input type="checkbox"/> or hydrology <input type="checkbox"/> significantly disturbed?			Are "Normal Circumstances" present?	
Is vegetation <input type="checkbox"/> soil <input type="checkbox"/> or hydrology <input type="checkbox"/> naturally problematic?			Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

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

Hydrophytic vegetation present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric soil present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

Remarks:

### HYDROLOGY

#### Wetland Hydrology Indicators:

Primary indicators (minimum of one is required; check all that apply)	Secondary indicators (minimum of two required)
<input type="checkbox"/> Surface water (A1)	<input type="checkbox"/> Surface soil cracks (B6)
<input type="checkbox"/> High water table (A2)	<input type="checkbox"/> Sparsely vegetated concave surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage patterns (B10)
<input type="checkbox"/> Water marks (B1)	<input type="checkbox"/> Moss trim lines (B16)
<input type="checkbox"/> Sediment deposits (B2)	<input type="checkbox"/> Dry-season water table (C2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Crayfish burrows (C8)
<input type="checkbox"/> Algal mat or crust (B4)	<input type="checkbox"/> Saturation visible on aerial photos (C9)
<input type="checkbox"/> Iron deposits (B5)	<input type="checkbox"/> Geomorphic position (D2)
<input type="checkbox"/> Inundation visible on aerial photos (B7)	<input type="checkbox"/> Shallow aquitard (D3)
<input type="checkbox"/> Water-stained leaves (B9)	<input type="checkbox"/> FAC-neutral test (D5)
<input type="checkbox"/> Aquatic fauna (B13)	
<input type="checkbox"/> Marl deposits (B15) (LRR U)	
<input type="checkbox"/> Hydrogen sulfide odor (C1)	
<input type="checkbox"/> Oxidized rhizospheres on living roots (C3)	
<input type="checkbox"/> Presence of reduced iron (C4)	
<input type="checkbox"/> Recent iron reduction in tilled soils (C4)	
<input type="checkbox"/> Thick muck surface (C7)	
<input type="checkbox"/> Other (explain in remarks)	

#### Field Observations:

Surface water present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	<b>Is Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water table present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	
Saturation present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	
(includes capillary fringe)				

Describe recorded data (stream gage, monitoring well, aerial photos, previous inspections) if available:

Remarks:

<b>VEGETATION</b> - Use scientific names		Absolute	Dominant	Indicator	Sampling Point: DP4			
<u>Tree Stratum</u>	Plot size:	% Cover	Species?	Status	<b>Dominance Test Worksheet</b>			
<i>Pinus taeda</i>		60	Y	FAC	Number of OBL, FACW and FAC species:		3	
<i>Quercus nigra</i>		8	N	FAC	Total number of all dominant species:		4	
<i>Quercus falcata</i>		8	N	FACU	<b>% of OBL, FACW and FAC dominant species:</b>		75	
<i>Acer rubrum</i>		8	N	FAC	<b>Prevalence Index Worksheet</b>			
<i>Pinus virginiana</i>		4	N	UPL	Total % cover	Multiplier	B-value	
					OBL species	0	1	0
					FACW species	4	2	8
		88	Total Cover		FAC species	98	3	294
					FACU species	18	4	72
<u>Sapling Stratum</u>	Plot size:				FAC species	18	4	72
<i>Acer rubrum</i>		15	Y	FAC	UPL species	4	5	20
<i>Sassafras albidum</i>		6	Y	FACU	Column total	124		394
<i>Quercus nigra</i>		3	N	FAC	<b>Prevalence Index:</b>		3.18	
<i>Diospyros virginiana</i>		3	N	FAC	<b>Hydrophytic Vegetation Indicators</b>			
<i>Prunus serotina</i>		3	N	FACU	<input checked="" type="checkbox"/>	Dominance test is > 50%		
					<input type="checkbox"/>	Prevalence index is ≤ 3.0		
					<input type="checkbox"/>	Problematic hydrophytic vegetation		
		30	Total Cover		Explanation of problematic vegetation: Area is maintained as a power line easement			
<u>Shrub Stratum</u>	Plot size:				<b>Definitions of vegetation strata:</b>			
<i>Vaccinium corymbosum</i>		3	Y	FACW	<b>Tree</b> - Woody plants, excluding woody vines, approx. 20 feet (6 m) or more in height and 3 inches (7.6 cm) or larger in diameter at breast height (DBH).			
					<b>Sapling</b> - Woody plants, excluding woody vines, approx. 20 feet (6 m) or more in height and less than 3 inches (7.6 cm) DBH.			
					<b>Shrub</b> - Woody plants, excluding woody vines, approx. 3 to 20 feet (1 to 6 m) in height.			
		3	Total Cover		<b>Herb</b> - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 feet (1 m) in height.			
<u>Herb Stratum</u>	Plot size:				<b>Woody Vine</b> - All woody vines, regardless of height.			
<i>Sassafras albidum</i>		1	N	FACU	Remarks: (If observed, list morphological adaptations)			
<i>Quercus nigra</i>		1	N	FAC				
<i>Vaccinium corymbosum</i>		1	N	FACW				
		3	Total cover					
<u>Woody Vine Stratum</u>	Plot size:				<b>Is Hydrophytic Vegetation Present?</b>			
					Yes	<input type="checkbox"/>		
					No	<input checked="" type="checkbox"/>		
		0	Total cover					

SOIL							Sampling Point: DP4	
Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type	Loc		
0-2	10YR 3/3	100					Sd Lo	High organic content
2-8	10YR 5/2	90	10YR 4/1	10	C	M	Lo Sd	
8-18	10YR 4/4	85	10YR 4/6 & 5/3	15	C	M	Lo Sd	
Types: C-concentration, D-depletion, RM-reduced matrix, CS covered or coated sand grains.							Locations: PL-pore lining, M-matrix	
Hydric Soil Indicators:					Indicators for Problematic Hydric Soils:			
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic epipedon (A2) <input type="checkbox"/> Black histic (A3) <input type="checkbox"/> Hydrogen sulfide (A4) <input type="checkbox"/> Stratified layers (A5) <input type="checkbox"/> Organic bodies (A6)(LRR P, T, U) <input type="checkbox"/> 5 cm mucky mineral (A7)(LRR U) <input type="checkbox"/> Muck presence (A8)(LRR U) <input type="checkbox"/> 1 cm muck (A9) (LRR P, T) <input type="checkbox"/> Depleted below dark surface (A11) <input type="checkbox"/> Thick dark surface (A12) <input type="checkbox"/> Coast prairie redox (A16)(MLRA 150A) <input type="checkbox"/> Sandy mucky mineral (S1)(LRR O, S) <input type="checkbox"/> Sandy gleyed matrix (S4) <input type="checkbox"/> Sandy redox (S5) <input type="checkbox"/> Stripped matrix (S6) <input type="checkbox"/> Dark surface (S7)(LRR P, S, T, U)		<input type="checkbox"/> Polyvalue below surface (S8)(LRR S, T, U) <input type="checkbox"/> Thin dark surface (S9)(LRR S, T, U) <input type="checkbox"/> Loamy mucky mineral (F1)(LRR O) <input type="checkbox"/> Loamy gleyed matrix (F2) <input type="checkbox"/> Depleted matrix (F3) <input type="checkbox"/> Redox dark surface (F6) <input type="checkbox"/> Depleted dark surface (F7) <input type="checkbox"/> Redox depressions (F8) <input type="checkbox"/> Marl (F10)(LRR U) <input type="checkbox"/> Depleted ochric (F11)(MLRA 151) <input type="checkbox"/> Fe-Mn masses (F12)(LRR O, P, T) <input type="checkbox"/> Umbric surface (F13)(LRR P, T, U) <input type="checkbox"/> Delta ochric (F17)(MLRA 151) <input type="checkbox"/> Reduced vertic (F18)(MLRA 150A, 150B) <input type="checkbox"/> Piedmont floodplain soils (F19)(MLRA 149A) <input type="checkbox"/> Anomalous bright loamy soils (F20) (MLRA 149A, 153C, 153D)		<input type="checkbox"/> 1 cm muck (A9)(LRR O) <input type="checkbox"/> 2 cm muck (A10)(LRR S) <input type="checkbox"/> Reduced vertic (F18) (outside MLRA 150A, B) <input type="checkbox"/> Piedmont floodplain soils (F19) (LRR P, S, T) <input type="checkbox"/> Anomalous bright loamy soils (F20) (MLRA 153B) <input type="checkbox"/> Red parent material (TF2) <input type="checkbox"/> Very shallow dark surface (TF12) (LRR T, U) <input type="checkbox"/> Other (explain in remarks)				
Restrictive Layer (if observed): Type: Depth (inches):					<b>Is Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Remarks:								

## WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Proposed 230kV USW Substation Site		City/County: Sussex County		Sampling Date: 05-03-21
Applicant/Owner: US Wind			State: Delaware	Sampling Point: DP5
Investigators: Craig Smith			Section/Township:	
Landform: Plain		Local relief: Flat	% Slope: 0%	
Subregion: MLRA 153D	Lat: 38.5867°N	Long: -75.2410°W	Datum:	
Soil Map Unit Name: Runclint loamy sand (RuA)				NWI Classification: PSS/PFO

Are climatic/hydrologic conditions on the site typical for this time of year?		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Is vegetation <input type="checkbox"/> soil <input type="checkbox"/> or hydrology <input type="checkbox"/> significantly disturbed?		Are "Normal Circumstances" present?	
Is vegetation <input type="checkbox"/> soil <input type="checkbox"/> or hydrology <input type="checkbox"/> naturally problematic?		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

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

Hydrophytic vegetation present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric soil present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

Remarks:

### HYDROLOGY

#### Wetland Hydrology Indicators:

Primary indicators (minimum of one is required; check all that apply)	Secondary indicators (minimum of two required)
<input type="checkbox"/> Surface water (A1)	<input type="checkbox"/> Surface soil cracks (B6)
<input type="checkbox"/> High water table (A2)	<input type="checkbox"/> Sparsely vegetated concave surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage patterns (B10)
<input type="checkbox"/> Water marks (B1)	<input type="checkbox"/> Moss trim lines (B16)
<input type="checkbox"/> Sediment deposits (B2)	<input type="checkbox"/> Dry-season water table (C2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Crayfish burrows (C8)
<input type="checkbox"/> Algal mat or crust (B4)	<input type="checkbox"/> Saturation visible on aerial photos (C9)
<input type="checkbox"/> Iron deposits (B5)	<input checked="" type="checkbox"/> Geomorphic position (D2)
<input type="checkbox"/> Inundation visible on aerial photos (B7)	<input type="checkbox"/> Shallow aquitard (D3)
<input type="checkbox"/> Water-stained leaves (B9)	<input checked="" type="checkbox"/> FAC-neutral test (D5)
<input type="checkbox"/> Aquatic fauna (B13)	
<input type="checkbox"/> Marl deposits (B15) (LRR U)	
<input type="checkbox"/> Hydrogen sulfide odor (C1)	
<input type="checkbox"/> Oxidized rhizospheres on living roots (C3)	
<input type="checkbox"/> Presence of reduced iron (C4)	
<input type="checkbox"/> Recent iron reduction in tilled soils (C4)	
<input type="checkbox"/> Thick muck surface (C7)	
<input type="checkbox"/> Other (explain in remarks)	

#### Field Observations:

Surface water present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	<b>Is Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water table present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	
Saturation present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	
(includes capillary fringe)				

Describe recorded data (stream gage, monitoring well, aerial photos, previous inspections) if available:

Remarks: Area is a shallow depression between two upland forested areas

VEGETATION - Use scientific names		Absolute	Dominant	Indicator	Sampling Point: DP5			
<u>Tree Stratum</u>	Plot size:	% Cover	Species?	Status	<b>Dominance Test Worksheet</b>			
<i>Pinus taeda</i>		35	Y	FAC	Number of OBL, FACW and FAC species:		5	
<i>Acer rubrum</i>		15	Y	FAC	Total number of all dominant species:		5	
<i>Prunus serotina</i>		5	N	FACU	<b>% of OBL, FACW and FAC dominant species:</b>		100	
<i>Nyssa sylvatica</i>		5	N	FAC	<b>Prevalence Index Worksheet</b>			
<i>Quercus nigra</i>		5	N	FAC	Total % cover	Multiplier	B-value	
					OBL species	0	1	0
					FACW species	10	2	20
		65	Total Cover		FAC species	66	3	198
<u>Sapling Stratum</u>	Plot size:				FACU species	5	4	20
<i>Acer rubrum</i>		20	Y	FAC	UPL species	0	5	0
<i>Nyssa sylvatica</i>		15	Y	FAC	Column total	81		238
<i>Magnolia virginiana</i>		5	N	FACW	<b>Prevalence Index:</b>		2.94	
					<b>Hydrophytic Vegetation Indicators</b>			
					<input checked="" type="checkbox"/>	Dominance test is > 50%		
					<input checked="" type="checkbox"/>	Prevalence index is ≤ 3.0		
					<input type="checkbox"/>	Problematic hydrophytic vegetation		
		40	Total Cover		Explanation of problematic vegetation: Area is maintained as a power line easement			
<u>Shrub Stratum</u>	Plot size:				<b>Definitions of vegetation strata:</b>			
<i>Vaccinium corymbosum</i>		5	Y	FACW	<b>Tree</b> - Woody plants, excluding woody vines, approx. 20 feet (6 m) or more in height and 3 inches (7.6 cm) or larger in diameter at breast height (DBH).			
					<b>Sapling</b> - Woody plants, excluding woody vines, approx. 20 feet (6 m) or more in height and less than 3 inches (7.6 cm) DBH.			
		5	Total Cover		<b>Shrub</b> - Woody plants, excluding woody vines, approx. 3 to 20 feet (1 to 6 m) in height.			
<u>Herb Stratum</u>	Plot size:				<b>Herb</b> - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 feet (1 m) in height.			
					<b>Woody Vine</b> - All woody vines, regardless of height.			
					Remarks: (If observed, list morphological adaptations) No herbaceous vegetation in vicinity.			
		0	Total cover					
<u>Woody Vine Stratum</u>	Plot size:				<b>Is Hydrophytic Vegetation Present?</b>			
					Yes	<input checked="" type="checkbox"/>		
		0	Total cover		No	<input type="checkbox"/>		

SOIL							Sampling Point: DP5	
Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type	Loc		
0-2	10YR 3/1	100					Lo Sd	High organic content
2-4	10YR 5/1	90	10YR 4/1	10	C	M	Lo Sd	
4-16	10YR 5/3	85	10YR 4/3 & 5/6	15	C	M	Lo Sd	
16-18	10YR 6/4	90	10YR 5/3	10	C	M	Lo Sd	
Types: C-concentration, D-depletion, RM-reduced matrix, CS covered or coated sand grains.							Locations: PL-pore lining, M-matrix	
Hydric Soil Indicators:					Indicators for Problematic Hydric Soils:			
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic epipedon (A2) <input type="checkbox"/> Black histic (A3) <input type="checkbox"/> Hydrogen sulfide (A4) <input type="checkbox"/> Stratified layers (A5) <input type="checkbox"/> Organic bodies (A6)(LRR P, T, U) <input type="checkbox"/> 5 cm mucky mineral (A7)(LRR U) <input type="checkbox"/> Muck presence (A8)(LRR U) <input type="checkbox"/> 1 cm muck (A9) (LRR P, T) <input type="checkbox"/> Depleted below dark surface (A11) <input type="checkbox"/> Thick dark surface (A12) <input type="checkbox"/> Coast prairie redox (A16)(MLRA 150A) <input type="checkbox"/> Sandy mucky mineral (S1)(LRR O, S) <input type="checkbox"/> Sandy gleyed matrix (S4) <input type="checkbox"/> Sandy redox (S5) <input type="checkbox"/> Stripped matrix (S6) <input checked="" type="checkbox"/> Dark surface (S7)(LRR P, S, T, U)		<input type="checkbox"/> Polyvalue below surface (S8)(LRR S, T, U) <input type="checkbox"/> Thin dark surface (S9)(LRR S, T, U) <input type="checkbox"/> Loamy mucky mineral (F1)(LRR O) <input type="checkbox"/> Loamy gleyed matrix (F2) <input type="checkbox"/> Depleted matrix (F3) <input type="checkbox"/> Redox dark surface (F6) <input type="checkbox"/> Depleted dark surface (F7) <input type="checkbox"/> Redox depressions (F8) <input type="checkbox"/> Marl (F10)(LRR U) <input type="checkbox"/> Depleted ochric (F11)(MLRA 151) <input type="checkbox"/> Fe-Mn masses (F12)(LRR O, P, T) <input type="checkbox"/> Umbric surface (F13)(LRR P, T, U) <input type="checkbox"/> Delta ochric (F17)(MLRA 151) <input type="checkbox"/> Reduced vertic (F18)(MLRA 150A, 150B) <input type="checkbox"/> Piedmont floodplain soils (F19)(MLRA 149A) <input type="checkbox"/> Anomalous bright loamy soils (F20) (MLRA 149A, 153C, 153D)		<input type="checkbox"/> 1 cm muck (A9)(LRR O) <input type="checkbox"/> 2 cm muck (A10)(LRR S) <input type="checkbox"/> Reduced vertic (F18) (outside MLRA 150A, B) <input type="checkbox"/> Piedmont floodplain soils (F19) (LRR P, S, T) <input type="checkbox"/> Anomalous bright loamy soils (F20) (MLRA 153B) <input type="checkbox"/> Red parent material (TF2) <input type="checkbox"/> Very shallow dark surface (TF12) (LRR T, U) <input type="checkbox"/> Other (explain in remarks)				
Restrictive Layer (if observed): Type: Depth (inches):					<b>Is Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Remarks:								



## WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Proposed 230kV USW Substation Site		City/County: Sussex County		Sampling Date: 05-03-21
Applicant/Owner: US Wind			State: Delaware	Sampling Point: DP6
Investigators: Craig Smith			Section/Township:	
Landform: Plain		Local relief: Flat	% Slope: 1%	
Subregion: MLRA 153D	Lat: 38.5879°N	Long: -75.2418°W	Datum:	
Soil Map Unit Name: Runclint loamy sand (RuA)				NWI Classification: UPL
Are climatic/hydrologic conditions on the site typical for this time of year?				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Is vegetation <input type="checkbox"/> soil <input type="checkbox"/> or hydrology <input type="checkbox"/> significantly disturbed?			Are "Normal Circumstances" present?	
Is vegetation <input type="checkbox"/> soil <input type="checkbox"/> or hydrology <input type="checkbox"/> naturally problematic?			Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

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

Hydrophytic vegetation present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric soil present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

Remarks:

### HYDROLOGY

#### Wetland Hydrology Indicators:

Primary indicators (minimum of one is required; check all that apply)	Secondary indicators (minimum of two required)
<input type="checkbox"/> Surface water (A1)	<input type="checkbox"/> Surface soil cracks (B6)
<input type="checkbox"/> High water table (A2)	<input type="checkbox"/> Sparsely vegetated concave surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage patterns (B10)
<input type="checkbox"/> Water marks (B1)	<input type="checkbox"/> Moss trim lines (B16)
<input type="checkbox"/> Sediment deposits (B2)	<input type="checkbox"/> Dry-season water table (C2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Crayfish burrows (C8)
<input type="checkbox"/> Algal mat or crust (B4)	<input type="checkbox"/> Saturation visible on aerial photos (C9)
<input type="checkbox"/> Iron deposits (B5)	<input type="checkbox"/> Geomorphic position (D2)
<input type="checkbox"/> Inundation visible on aerial photos (B7)	<input type="checkbox"/> Shallow aquitard (D3)
<input type="checkbox"/> Water-stained leaves (B9)	<input type="checkbox"/> FAC-neutral test (D5)
<input type="checkbox"/> Aquatic fauna (B13)	
<input type="checkbox"/> Marl deposits (B15) (LRR U)	
<input type="checkbox"/> Hydrogen sulfide odor (C1)	
<input type="checkbox"/> Oxidized rhizospheres on living roots (C3)	
<input type="checkbox"/> Presence of reduced iron (C4)	
<input type="checkbox"/> Recent iron reduction in tilled soils (C4)	
<input type="checkbox"/> Thick muck surface (C7)	
<input type="checkbox"/> Other (explain in remarks)	

#### Field Observations:

Surface water present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	<b>Is Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water table present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	
Saturation present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	
(includes capillary fringe)				

Describe recorded data (stream gage, monitoring well, aerial photos, previous inspections) if available:

Remarks:



SOIL							Sampling Point: DP6	
Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type	Loc		
0-1	10YR 2/1	100					Sd Lo	High organic content
1-3	10YR 4/1	100					Lo Sd	
3-6	10YR 5/2	90	10YR 5/3	10	C	M	Lo Sd	
6-15	10YR 4/4	90	10YR 5/3	10	C	M	Lo Sd	
15-18	10YR 5/4	90	10YR 4/3	10	C	M	Lo Sd	
Types: C-concentration, D-depletion, RM-reduced matrix, CS covered or coated sand grains.							Locations: PL-pore lining, M-matrix	
Hydric Soil Indicators:					Indicators for Problematic Hydric Soils:			
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic epipedon (A2) <input type="checkbox"/> Black histic (A3) <input type="checkbox"/> Hydrogen sulfide (A4) <input type="checkbox"/> Stratified layers (A5) <input type="checkbox"/> Organic bodies (A6)(LRR P, T, U) <input type="checkbox"/> 5 cm mucky mineral (A7)(LRR U) <input type="checkbox"/> Muck presence (A8)(LRR U) <input type="checkbox"/> 1 cm muck (A9) (LRR P, T) <input type="checkbox"/> Depleted below dark surface (A11) <input type="checkbox"/> Thick dark surface (A12) <input type="checkbox"/> Coast prairie redox (A16)(MLRA 150A) <input type="checkbox"/> Sandy mucky mineral (S1)(LRR O, S) <input type="checkbox"/> Sandy gleyed matrix (S4) <input type="checkbox"/> Sandy redox (S5) <input type="checkbox"/> Stripped matrix (S6) <input type="checkbox"/> Dark surface (S7)(LRR P, S, T, U)		<input type="checkbox"/> Polyvalue below surface (S8)(LRR S, T, U) <input type="checkbox"/> Thin dark surface (S9)(LRR S, T, U) <input type="checkbox"/> Loamy mucky mineral (F1)(LRR O) <input type="checkbox"/> Loamy gleyed matrix (F2) <input type="checkbox"/> Depleted matrix (F3) <input type="checkbox"/> Redox dark surface (F6) <input type="checkbox"/> Depleted dark surface (F7) <input type="checkbox"/> Redox depressions (F8) <input type="checkbox"/> Marl (F10)(LRR U) <input type="checkbox"/> Depleted ochric (F11)(MLRA 151) <input type="checkbox"/> Fe-Mn masses (F12)(LRR O, P, T) <input type="checkbox"/> Umbric surface (F13)(LRR P, T, U) <input type="checkbox"/> Delta ochric (F17)(MLRA 151) <input type="checkbox"/> Reduced vertic (F18)(MLRA 150A, 150B) <input type="checkbox"/> Piedmont floodplain soils (F19)(MLRA 149A) <input type="checkbox"/> Anomalous bright loamy soils (F20) (MLRA 149A, 153C, 153D)		<input type="checkbox"/> 1 cm muck (A9)(LRR O) <input type="checkbox"/> 2 cm muck (A10)(LRR S) <input type="checkbox"/> Reduced vertic (F18) (outside MLRA 150A, B) <input type="checkbox"/> Piedmont floodplain soils (F19) (LRR P, S, T) <input type="checkbox"/> Anomalous bright loamy soils (F20) (MLRA 153B) <input type="checkbox"/> Red parent material (TF2) <input type="checkbox"/> Very shallow dark surface (TF12) (LRR T, U) <input type="checkbox"/> Other (explain in remarks)				
Restrictive Layer (if observed): Type: Depth (inches):					<b>Is Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Remarks:								

## WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Proposed 230kV USW Substation Site		City/County: Sussex County		Sampling Date: 05-04-21
Applicant/Owner: US Wind			State: Delaware	Sampling Point: DP7
Investigators: Craig Smith			Section/Township:	
Landform: Plain		Local relief: Flat	% Slope: 1%	
Subregion: MLRA 153D	Lat: 38.5874°N	Long: -75.2438°W	Datum:	
Soil Map Unit Name: Henlopen loamy sand (HpA)				NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year?		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Is vegetation <input type="checkbox"/> soil <input type="checkbox"/> or hydrology <input type="checkbox"/> significantly disturbed?		Are "Normal Circumstances" present?	
Is vegetation <input type="checkbox"/> soil <input type="checkbox"/> or hydrology <input type="checkbox"/> naturally problematic?		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

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

Hydrophytic vegetation present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric soil present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

Remarks:

### HYDROLOGY

#### Wetland Hydrology Indicators:

Primary indicators (minimum of one is required; check all that apply)	Secondary indicators (minimum of two required)
<input type="checkbox"/> Surface water (A1)	<input type="checkbox"/> Surface soil cracks (B6)
<input type="checkbox"/> High water table (A2)	<input type="checkbox"/> Sparsely vegetated concave surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage patterns (B10)
<input type="checkbox"/> Water marks (B1)	<input type="checkbox"/> Moss trim lines (B16)
<input type="checkbox"/> Sediment deposits (B2)	<input type="checkbox"/> Dry-season water table (C2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Crayfish burrows (C8)
<input type="checkbox"/> Algal mat or crust (B4)	<input type="checkbox"/> Saturation visible on aerial photos (C9)
<input type="checkbox"/> Iron deposits (B5)	<input type="checkbox"/> Geomorphic position (D2)
<input type="checkbox"/> Inundation visible on aerial photos (B7)	<input type="checkbox"/> Shallow aquitard (D3)
<input type="checkbox"/> Water-stained leaves (B9)	<input type="checkbox"/> FAC-neutral test (D5)
<input type="checkbox"/> Aquatic fauna (B13)	
<input type="checkbox"/> Marl deposits (B15) (LRR U)	
<input type="checkbox"/> Hydrogen sulfide odor (C1)	
<input type="checkbox"/> Oxidized rhizospheres on living roots (C3)	
<input type="checkbox"/> Presence of reduced iron (C4)	
<input type="checkbox"/> Recent iron reduction in tilled soils (C4)	
<input type="checkbox"/> Thick muck surface (C7)	
<input type="checkbox"/> Other (explain in remarks)	

#### Field Observations:

Surface water present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	<b>Is Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water table present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	
Saturation present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	
(includes capillary fringe)				

Describe recorded data (stream gage, monitoring well, aerial photos, previous inspections) if available:

Remarks:

VEGETATION - Use scientific names		Absolute	Dominant	Indicator	Sampling Point: DP7			
<u>Tree Stratum</u>	Plot size:	% Cover	Species?	Status	<b>Dominance Test Worksheet</b>			
<i>Quercus falcata</i>		20	Y	FACU	Number of OBL, FACW and FAC species:			2
<i>Carya tomentosa</i>		20	Y	UPL	Total number of all dominant species:			7
<i>Pinus taeda</i>		15	Y	FAC	<b>% of OBL, FACW and FAC dominant species:</b>			29
<i>Quercus velutina</i>		5	N	UPL	<b>Prevalence Index Worksheet</b>			
<i>Pinus virginiana</i>		5	N	UPL	Total % cover		Multiplier	B-value
<i>Sassafras albidum</i>		5	N	FACU	OBL species	0	1	0
					FACW species	0	2	0
		70	Total Cover		FAC species	35	3	105
<u>Sapling Stratum</u>	Plot size:				FACU species	86	4	344
<i>Diospyros virginiana</i>		15	Y	FAC	UPL species	45	5	225
<i>Carya tomentosa</i>		10	Y	UPL	Column total	166		674
<i>Sassafras albidum</i>		10	Y	FACU	<b>Prevalence Index:</b>			4.06
<i>Pinus virginiana</i>		5	N	UPL	<b>Hydrophytic Vegetation Indicators</b>			
					<input type="checkbox"/> Dominance test is > 50%			
					<input type="checkbox"/> Prevalence index is ≤ 3.0			
					<input type="checkbox"/> Problematic hydrophytic vegetation			
		40	Total Cover		Explanation of problematic vegetation: Area is maintained as a power line easement			
<u>Shrub Stratum</u>	Plot size:				<b>Definitions of vegetation strata:</b>			
					<b>Tree</b> - Woody plants, excluding woody vines, approx. 20 feet (6 m) or more in height and 3 inches (7.6 cm) or larger in diameter at breast height (DBH).			
					<b>Sapling</b> - Woody plants, excluding woody vines, approx. 20 feet (6 m) or more in height and less than 3 inches (7.6 cm) DBH.			
		0	Total Cover		<b>Shrub</b> - Woody plants, excluding woody vines, approx. 3 to 20 feet (1 to 6 m) in height.			
<u>Herb Stratum</u>	Plot size:				<b>Herb</b> - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 feet (1 m) in height.			
<i>Vaccinium angustifolium</i>		50	Y	FACU	<b>Woody Vine</b> - All woody vines, regardless of height.			
<i>Dichanthelium sphaerocarpon</i>		1	N	FACU				
<i>Smilax rotundifolia</i>		1	N	FAC	Remarks: (If observed, list morphological adaptations)			
<i>Quercus nigra</i>		1	N	FAC				
<i>Acer rubrum</i>		1	N	FAC				
<i>Ilex opaca</i>		1	N	FAC				
<i>Pinus taeda</i>		1	N	FAC				
		56	Total cover					
<u>Woody Vine Stratum</u>	Plot size:				<b>Is Hydrophytic Vegetation Present?</b>			
					Yes <input type="checkbox"/>			
					No <input checked="" type="checkbox"/>			
		0	Total cover					

SOIL							Sampling Point: DP7	
Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type	Loc		
0-1	10YR 5/1	100					Sd Lo	
1-3	10YR 5/2	85	10YR 4/3 & 6/1	15	C	M	Lo Sd	
3-6	10YR 4/3	90	10YR 4/4	10	C	M	Lo Sd	
6-15	10YR 5/4	90	10YR 5/3	10	C	M	Lo Sd	
15-18	10YR 6/3	90	10YR 6/4	10	C	M	Lo Sd	
Types: C-concentration, D-depletion, RM-reduced matrix, CS covered or coated sand grains.							Locations: PL-pore lining, M-matrix	
Hydric Soil Indicators:					Indicators for Problematic Hydric Soils:			
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic epipedon (A2) <input type="checkbox"/> Black histic (A3) <input type="checkbox"/> Hydrogen sulfide (A4) <input type="checkbox"/> Stratified layers (A5) <input type="checkbox"/> Organic bodies (A6)(LRR P, T, U) <input type="checkbox"/> 5 cm mucky mineral (A7)(LRR U) <input type="checkbox"/> Muck presence (A8)(LRR U) <input type="checkbox"/> 1 cm muck (A9) (LRR P, T) <input type="checkbox"/> Depleted below dark surface (A11) <input type="checkbox"/> Thick dark surface (A12) <input type="checkbox"/> Coast prairie redox (A16)(MLRA 150A) <input type="checkbox"/> Sandy mucky mineral (S1)(LRR O, S) <input type="checkbox"/> Sandy gleyed matrix (S4) <input type="checkbox"/> Sandy redox (S5) <input type="checkbox"/> Stripped matrix (S6) <input type="checkbox"/> Dark surface (S7)(LRR P, S, T, U)		<input type="checkbox"/> Polyvalue below surface (S8)(LRR S, T, U) <input type="checkbox"/> Thin dark surface (S9)(LRR S, T, U) <input type="checkbox"/> Loamy mucky mineral (F1)(LRR O) <input type="checkbox"/> Loamy gleyed matrix (F2) <input type="checkbox"/> Depleted matrix (F3) <input type="checkbox"/> Redox dark surface (F6) <input type="checkbox"/> Depleted dark surface (F7) <input type="checkbox"/> Redox depressions (F8) <input type="checkbox"/> Marl (F10)(LRR U) <input type="checkbox"/> Depleted ochric (F11)(MLRA 151) <input type="checkbox"/> Fe-Mn masses (F12)(LRR O, P, T) <input type="checkbox"/> Umbric surface (F13)(LRR P, T, U) <input type="checkbox"/> Delta ochric (F17)(MLRA 151) <input type="checkbox"/> Reduced vertic (F18)(MLRA 150A, 150B) <input type="checkbox"/> Piedmont floodplain soils (F19)(MLRA 149A) <input type="checkbox"/> Anomalous bright loamy soils (F20) (MLRA 149A, 153C, 153D)		<input type="checkbox"/> 1 cm muck (A9)(LRR O) <input type="checkbox"/> 2 cm muck (A10)(LRR S) <input type="checkbox"/> Reduced vertic (F18) (outside MLRA 150A, B) <input type="checkbox"/> Piedmont floodplain soils (F19) (LRR P, S, T) <input type="checkbox"/> Anomalous bright loamy soils (F20) (MLRA 153B) <input type="checkbox"/> Red parent material (TF2) <input type="checkbox"/> Very shallow dark surface (TF12) (LRR T, U) <input type="checkbox"/> Other (explain in remarks)				
Restrictive Layer (if observed): Type: Depth (inches):					<b>Is Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Remarks:								

## WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Proposed 230kV USW Substation Site		City/County: Sussex County		Sampling Date: 05-04-21
Applicant/Owner: US Wind			State: Delaware	Sampling Point: DP8
Investigators: Craig Smith			Section/Township:	
Landform: Plain		Local relief: Flat	% Slope: 1%	
Subregion: MLRA 153D	Lat: 38.5865°N	Long: -75.2446°W	Datum:	
Soil Map Unit Name: Henlopen loamy sand (HpA)				NWI Classification: UPL
Are climatic/hydrologic conditions on the site typical for this time of year?				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Is vegetation <input type="checkbox"/> soil <input type="checkbox"/> or hydrology <input type="checkbox"/> significantly disturbed?			Are "Normal Circumstances" present?	
Is vegetation <input type="checkbox"/> soil <input type="checkbox"/> or hydrology <input type="checkbox"/> naturally problematic?			Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

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

Hydrophytic vegetation present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric soil present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

Remarks:

### HYDROLOGY

#### Wetland Hydrology Indicators:

Primary indicators (minimum of one is required; check all that apply)	Secondary indicators (minimum of two required)
<input type="checkbox"/> Surface water (A1)	<input type="checkbox"/> Surface soil cracks (B6)
<input type="checkbox"/> High water table (A2)	<input type="checkbox"/> Sparsely vegetated concave surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage patterns (B10)
<input type="checkbox"/> Water marks (B1)	<input type="checkbox"/> Moss trim lines (B16)
<input type="checkbox"/> Sediment deposits (B2)	<input type="checkbox"/> Dry-season water table (C2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Crayfish burrows (C8)
<input type="checkbox"/> Algal mat or crust (B4)	<input type="checkbox"/> Saturation visible on aerial photos (C9)
<input type="checkbox"/> Iron deposits (B5)	<input type="checkbox"/> Geomorphic position (D2)
<input type="checkbox"/> Inundation visible on aerial photos (B7)	<input type="checkbox"/> Shallow aquitard (D3)
<input type="checkbox"/> Water-stained leaves (B9)	<input type="checkbox"/> FAC-neutral test (D5)
<input type="checkbox"/> Aquatic fauna (B13)	
<input type="checkbox"/> Marl deposits (B15) (LRR U)	
<input type="checkbox"/> Hydrogen sulfide odor (C1)	
<input type="checkbox"/> Oxidized rhizospheres on living roots (C3)	
<input type="checkbox"/> Presence of reduced iron (C4)	
<input type="checkbox"/> Recent iron reduction in tilled soils (C4)	
<input type="checkbox"/> Thick muck surface (C7)	
<input type="checkbox"/> Other (explain in remarks)	

#### Field Observations:

Surface water present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	<b>Is Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water table present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	
Saturation present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	
(includes capillary fringe)				

Describe recorded data (stream gage, monitoring well, aerial photos, previous inspections) if available:

Remarks:

VEGETATION - Use scientific names		Absolute	Dominant	Indicator	Sampling Point: DP8			
<u>Tree Stratum</u>	Plot size:	% Cover	Species?	Status	<b>Dominance Test Worksheet</b>			
<i>Pinus virginiana</i>		30	Y	UPL	Number of OBL, FACW and FAC species:			4
<i>Quercus falcata</i>		20	Y	FACU	Total number of all dominant species:			8
<i>Pinus taeda</i>		10	N	FAC	<b>% of OBL, FACW and FAC dominant species:</b>			50
<i>Quercus alba</i>		10	N	FACU	<b>Prevalence Index Worksheet</b>			
<i>Quercus velutina</i>		5	N	UPL	Total % cover		Multiplier	B-value
<i>Acer rubrum</i>		5	N	FAC	OBL species	0	1	0
					FACW species	10	2	20
		80	Total Cover		FAC species	49	3	147
<u>Sapling Stratum</u>	Plot size:				FACU species	104	4	416
<i>Sassafras albidum</i>		20	Y	FACU	UPL species	35	5	175
<i>Diospyros virginiana</i>		10	Y	FAC	Column total	198		758
<i>Nyssa sylvatica</i>		10	Y	FAC	<b>Prevalence Index:</b>			3.83
<i>Acer rubrum</i>		5	N	FAC	<b>Hydrophytic Vegetation Indicators</b>			
<i>Carya cordiformis</i>		2	N	FAC	<input type="checkbox"/> Dominance test is > 50%			
<i>Quercus falcata</i>		2	N	FACU	<input type="checkbox"/> Prevalence index is ≤ 3.0			
					<input type="checkbox"/> Problematic hydrophytic vegetation			
		49	Total Cover		Explanation of problematic vegetation: Area is maintained as a power line easement			
<u>Shrub Stratum</u>	Plot size:				<b>Definitions of vegetation strata:</b>			
<i>Vaccinium corymbosum</i>		10	Y	FACW	<b>Tree</b> - Woody plants, excluding woody vines, approx.			
<i>Ilex opaca</i>		4	Y	FAC	20 feet (6 m) or more in height and 3 inches (7.6 cm) or larger in diameter at breast height (DBH).			
					<b>Sapling</b> - Woody plants, excluding woody vines, approx.			
					20 feet (6 m) or more in height and less than 3 inches (7.6 cm) DBH.			
		14	Total Cover		<b>Shrub</b> - Woody plants, excluding woody vines, approx.			
<u>Herb Stratum</u>	Plot size:				3 to 20 feet (1 to 6 m) in height.			
<i>Vaccinium angustifolium</i>		50	Y	FACU	<b>Herb</b> - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately			
<i>Diospyros virginiana</i>		1	N	FAC	3 feet (1 m) in height.			
<i>Smilax rotundifolia</i>		1	N	FAC	<b>Woody Vine</b> - All woody vines, regardless of height.			
<i>Quercus falcata</i>		1	N	FACU	Remarks: (If observed, list morphological adaptations)			
<i>Sassafras albidum</i>		1	N	FACU				
<i>Ilex opaca</i>		1	N	FAC				
		55	Total cover					
<u>Woody Vine Stratum</u>	Plot size:							
		0	Total cover		<b>Is Hydrophytic Vegetation Present?</b>			
					Yes <input type="checkbox"/>			
					No <input checked="" type="checkbox"/>			



SOIL							Sampling Point: DP8	
Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type	Loc		
0-1	10YR 3/1	100					Sd Lo	High organic content
1-2	10YR 4/1	90	10YR 5/1	10	C	M	Lo Sd	
2-5	10YR 5/1	85	10YR 4/1 & 4/3	15	C	M	Lo Sd	
5-10	10YR 5/4	85	10YR 5/1 & 5/3	15	C	M	Lo Sd	
10-15	10YR 6/4	85	10YR 6/2 & 6/3	15	C	M	Lo Sd	
15-18	10YR 6/4	90	10YR 6/3	10	C	M	Lo Sd	
Types: C-concentration, D-depletion, RM-reduced matrix, CS covered or coated sand grains.							Locations: PL-pore lining, M-matrix	
Hydric Soil Indicators:					Indicators for Problematic Hydric Soils:			
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic epipedon (A2) <input type="checkbox"/> Black histic (A3) <input type="checkbox"/> Hydrogen sulfide (A4) <input type="checkbox"/> Stratified layers (A5) <input type="checkbox"/> Organic bodies (A6)(LRR P, T, U) <input type="checkbox"/> 5 cm mucky mineral (A7)(LRR U) <input type="checkbox"/> Muck presence (A8)(LRR U) <input type="checkbox"/> 1 cm muck (A9) (LRR P, T) <input type="checkbox"/> Depleted below dark surface (A11) <input type="checkbox"/> Thick dark surface (A12) <input type="checkbox"/> Coast prairie redox (A16)(MLRA 150A) <input type="checkbox"/> Sandy mucky mineral (S1)(LRR O, S) <input type="checkbox"/> Sandy gleyed matrix (S4) <input type="checkbox"/> Sandy redox (S5) <input type="checkbox"/> Stripped matrix (S6) <input type="checkbox"/> Dark surface (S7)(LRR P, S, T, U)		<input type="checkbox"/> Polyvalue below surface (S8)(LRR S, T, U) <input type="checkbox"/> Thin dark surface (S9)(LRR S, T, U) <input type="checkbox"/> Loamy mucky mineral (F1)(LRR O) <input type="checkbox"/> Loamy gleyed matrix (F2) <input type="checkbox"/> Depleted matrix (F3) <input type="checkbox"/> Redox dark surface (F6) <input type="checkbox"/> Depleted dark surface (F7) <input type="checkbox"/> Redox depressions (F8) <input type="checkbox"/> Marl (F10)(LRR U) <input type="checkbox"/> Depleted ochric (F11)(MLRA 151) <input type="checkbox"/> Fe-Mn masses (F12)(LRR O, P, T) <input type="checkbox"/> Umbric surface (F13)(LRR P, T, U) <input type="checkbox"/> Delta ochric (F17)(MLRA 151) <input type="checkbox"/> Reduced vertic (F18)(MLRA 150A, 150B) <input type="checkbox"/> Piedmont floodplain soils (F19)(MLRA 149A) <input type="checkbox"/> Anomalous bright loamy soils (F20) (MLRA 149A, 153C, 153D)		<input type="checkbox"/> 1 cm muck (A9)(LRR O) <input type="checkbox"/> 2 cm muck (A10)(LRR S) <input type="checkbox"/> Reduced vertic (F18) (outside MLRA 150A, B) <input type="checkbox"/> Piedmont floodplain soils (F19) (LRR P, S, T) <input type="checkbox"/> Anomalous bright loamy soils (F20) (MLRA 153B) <input type="checkbox"/> Red parent material (TF2) <input type="checkbox"/> Very shallow dark surface (TF12) (LRR T, U) <input type="checkbox"/> Other (explain in remarks)				
Restrictive Layer (if observed): Type: Depth (inches):					<b>Is Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Remarks:								

## WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Proposed 230kV USW Substation Site		City/County: Sussex County		Sampling Date: 05-04-21
Applicant/Owner: US Wind			State: Delaware	Sampling Point: DP9
Investigators: Craig Smith			Section/Township:	
Landform: Plain		Local relief: Flat	% Slope: 1-2%	
Subregion: MLRA 153D	Lat: 38.5859°N	Long: -75.2460°W	Datum:	
Soil Map Unit Name: Henlopen loamy sand (HpA)				NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No

Is vegetation  soil  or hydrology  significantly disturbed? Are "Normal Circumstances" present?

Is vegetation  soil  or hydrology  naturally problematic? Yes  No

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

Hydrophytic vegetation present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric soil present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

Remarks:

### HYDROLOGY

#### Wetland Hydrology Indicators:

Primary indicators (minimum of one is required; check all that apply)	Secondary indicators (minimum of two required)
<input type="checkbox"/> Surface water (A1)	<input type="checkbox"/> Surface soil cracks (B6)
<input type="checkbox"/> High water table (A2)	<input type="checkbox"/> Sparsely vegetated concave surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage patterns (B10)
<input type="checkbox"/> Water marks (B1)	<input type="checkbox"/> Moss trim lines (B16)
<input type="checkbox"/> Sediment deposits (B2)	<input type="checkbox"/> Dry-season water table (C2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Crayfish burrows (C8)
<input type="checkbox"/> Algal mat or crust (B4)	<input type="checkbox"/> Saturation visible on aerial photos (C9)
<input type="checkbox"/> Iron deposits (B5)	<input type="checkbox"/> Geomorphic position (D2)
<input type="checkbox"/> Inundation visible on aerial photos (B7)	<input type="checkbox"/> Shallow aquitard (D3)
<input type="checkbox"/> Water-stained leaves (B9)	<input type="checkbox"/> FAC-neutral test (D5)
<input type="checkbox"/> Aquatic fauna (B13)	
<input type="checkbox"/> Marl deposits (B15) (LRR U)	
<input type="checkbox"/> Hydrogen sulfide odor (C1)	
<input type="checkbox"/> Oxidized rhizospheres on living roots (C3)	
<input type="checkbox"/> Presence of reduced iron (C4)	
<input type="checkbox"/> Recent iron reduction in tilled soils (C4)	
<input type="checkbox"/> Thick muck surface (C7)	
<input type="checkbox"/> Other (explain in remarks)	

#### Field Observations:

Surface water present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	<b>Is Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water table present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	
Saturation present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	
(includes capillary fringe)				

Describe recorded data (stream gage, monitoring well, aerial photos, previous inspections) if available:

Remarks:

VEGETATION - Use scientific names					Sampling Point: DP9			
<u>Tree Stratum</u>	Plot size:	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test Worksheet</b>			
<i>Pinus taeda</i>		30	Y	FAC	Number of OBL, FACW and FAC species:			2
<i>Quercus alba</i>		20	Y	FACU	Total number of all dominant species:			6
<i>Quercus velutina</i>		10	N	UPL	<b>% of OBL, FACW and FAC dominant species:</b>			33
<i>Carya cordiformis</i>		10	N	FAC	<b>Prevalence Index Worksheet</b>			
<i>Quercus falcata</i>		5	N	FACU	Total % cover		Multiplier	B-value
<i>Pinus virginiana</i>		5	N	UPL	OBL species	0	1	0
					FACW species	10	2	20
		80	Total Cover		FAC species	60	3	180
<u>Sapling Stratum</u>	Plot size:				FACU species	92	4	368
<i>Carya cordiformis</i>		20	Y	FAC	UPL species	27	5	135
<i>Carya tomentosa</i>		10	Y	UPL	Column total	189		703
<i>Quercus alba</i>		10	Y	FACU	<b>Prevalence Index:</b>			3.72
<i>Cornus florida</i>		5	N	FACU	<b>Hydrophytic Vegetation Indicators</b>			
<i>Sassafras albidum</i>		2	N	FACU	<input type="checkbox"/>	Dominance test is > 50%		
<i>Pinus virginiana</i>		2	N	UPL	<input type="checkbox"/>	Prevalence index is ≤ 3.0		
					<input type="checkbox"/>	Problematic hydrophytic vegetation		
		49	Total Cover		Explanation of problematic vegetation: Area is maintained as a power line easement			
<u>Shrub Stratum</u>	Plot size:				<b>Definitions of vegetation strata:</b>			
					<b>Tree</b> - Woody plants, excluding woody vines, approx. 20 feet (6 m) or more in height and 3 inches (7.6 cm) or larger in diameter at breast height (DBH).			
					<b>Sapling</b> - Woody plants, excluding woody vines, approx. 20 feet (6 m) or more in height and less than 3 inches (7.6 cm) DBH.			
		0	Total Cover		<b>Shrub</b> - Woody plants, excluding woody vines, approx. 3 to 20 feet (1 to 6 m) in height.			
<u>Herb Stratum</u>	Plot size:				<b>Herb</b> - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 feet (1 m) in height.			
<i>Vaccinium angustifolium</i>		50	Y	FACU	<b>Woody Vine</b> - All woody vines, regardless of height.			
<i>Quercus falcata</i>		1	N	FACU	Remarks: (If observed, list morphological adaptations)			
		51	Total cover					
<u>Woody Vine Stratum</u>	Plot size:				<b>Is Hydrophytic Vegetation Present?</b>			
					Yes <input type="checkbox"/>			
					No <input checked="" type="checkbox"/>			
		0	Total cover					

SOIL							Sampling Point: DP9						
Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)													
Depth (inches)	Matrix		Redox Features				Texture	Remarks					
	Color (moist)	%	Color (moist)	%	Type	Loc							
0-1	10YR 4/1	90	10YR 3/1	10	C	M	Sd Lo	High organic content					
1-3	10YR 3/3	90	10YR 4/4	10	C	M	Lo Sd						
3-10	10YR 4/4	90	10YR 5/3	10	C	M	Lo Sd						
10-18	10YR 6/3	90	10YR 6/4	10	C	M	Lo Sd						
Types: C-concentration, D-depletion, RM-reduced matrix, CS covered or coated sand grains.							Locations: PL-pore lining, M-matrix						
Hydric Soil Indicators:					Indicators for Problematic Hydric Soils:								
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic epipedon (A2) <input type="checkbox"/> Black histic (A3) <input type="checkbox"/> Hydrogen sulfide (A4) <input type="checkbox"/> Stratified layers (A5) <input type="checkbox"/> Organic bodies (A6)(LRR P, T, U) <input type="checkbox"/> 5 cm mucky mineral (A7)(LRR U) <input type="checkbox"/> Muck presence (A8)(LRR U) <input type="checkbox"/> 1 cm muck (A9) (LRR P, T) <input type="checkbox"/> Depleted below dark surface (A11) <input type="checkbox"/> Thick dark surface (A12) <input type="checkbox"/> Coast prairie redox (A16)(MLRA 150A) <input type="checkbox"/> Sandy mucky mineral (S1)(LRR O, S) <input type="checkbox"/> Sandy gleyed matrix (S4) <input type="checkbox"/> Sandy redox (S5) <input type="checkbox"/> Stripped matrix (S6) <input type="checkbox"/> Dark surface (S7)(LRR P, S, T, U)					<input type="checkbox"/> Polyvalue below surface (S8)(LRR S, T, U) <input type="checkbox"/> Thin dark surface (S9)(LRR S, T, U) <input type="checkbox"/> Loamy mucky mineral (F1)(LRR O) <input type="checkbox"/> Loamy gleyed matrix (F2) <input type="checkbox"/> Depleted matrix (F3) <input type="checkbox"/> Redox dark surface (F6) <input type="checkbox"/> Depleted dark surface (F7) <input type="checkbox"/> Redox depressions (F8) <input type="checkbox"/> Marl (F10)(LRR U) <input type="checkbox"/> Depleted ochric (F11)(MLRA 151) <input type="checkbox"/> Fe-Mn masses (F12)(LRR O, P, T) <input type="checkbox"/> Umbric surface (F13)(LRR P, T, U) <input type="checkbox"/> Delta ochric (F17)(MLRA 151) <input type="checkbox"/> Reduced vertic (F18)(MLRA 150A, 150B) <input type="checkbox"/> Piedmont floodplain soils (F19)(MLRA 149A) <input type="checkbox"/> Anomalous bright loamy soils (F20) (MLRA 149A, 153C, 153D)					<input type="checkbox"/> 1 cm muck (A9)(LRR O) <input type="checkbox"/> 2 cm muck (A10)(LRR S) <input type="checkbox"/> Reduced vertic (F18) (outside MLRA 150A, B) <input type="checkbox"/> Piedmont floodplain soils (F19) (LRR P, S, T) <input type="checkbox"/> Anomalous bright loamy soils (F20) (MLRA 153B) <input type="checkbox"/> Red parent material (TF2) <input type="checkbox"/> Very shallow dark surface (TF12) (LRR T, U) <input type="checkbox"/> Other (explain in remarks)			
Restrictive Layer (if observed): Type: Depth (inches):					<b>Is Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>								
Remarks:													

## WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Proposed 230kV USW Substation Site		City/County: Sussex County		Sampling Date: 05-04-21
Applicant/Owner: US Wind			State: Delaware	Sampling Point: DP10
Investigators: Craig Smith			Section/Township:	
Landform: Plain		Local relief: Flat	% Slope: 0%	
Subregion: MLRA 153D	Lat: 38.5875°N	Long: -75.2483°W	Datum:	
Soil Map Unit Name: Broadkill mucky peat (Br)				NWI Classification: PEM/PSS

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No

Is vegetation  soil  or hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No

Is vegetation  soil  or hydrology  naturally problematic? Yes  No

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

Hydrophytic vegetation present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric soil present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

Remarks:

### HYDROLOGY

#### Wetland Hydrology Indicators:

Primary indicators (minimum of one is required; check all that apply)	Secondary indicators (minimum of two required)
<input type="checkbox"/> Surface water (A1)	<input type="checkbox"/> Surface soil cracks (B6)
<input type="checkbox"/> High water table (A2)	<input type="checkbox"/> Sparsely vegetated concave surface (B8)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage patterns (B10)
<input type="checkbox"/> Water marks (B1)	<input type="checkbox"/> Moss trim lines (B16)
<input type="checkbox"/> Sediment deposits (B2)	<input type="checkbox"/> Dry-season water table (C2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Crayfish burrows (C8)
<input type="checkbox"/> Algal mat or crust (B4)	<input type="checkbox"/> Saturation visible on aerial photos (C9)
<input type="checkbox"/> Iron deposits (B5)	<input checked="" type="checkbox"/> Geomorphic position (D2)
<input type="checkbox"/> Inundation visible on aerial photos (B7)	<input type="checkbox"/> Shallow aquitard (D3)
<input type="checkbox"/> Water-stained leaves (B9)	<input checked="" type="checkbox"/> FAC-neutral test (D5)
<input type="checkbox"/> Aquatic fauna (B13)	
<input type="checkbox"/> Marl deposits (B15) (LRR U)	
<input type="checkbox"/> Hydrogen sulfide odor (C1)	
<input type="checkbox"/> Oxidized rhizospheres on living roots (C3)	
<input type="checkbox"/> Presence of reduced iron (C4)	
<input type="checkbox"/> Recent iron reduction in tilled soils (C4)	
<input type="checkbox"/> Thick muck surface (C7)	
<input type="checkbox"/> Other (explain in remarks)	

#### Field Observations:

Surface water present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	<b>Is Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water table present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	
Saturation present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Depth (inches) 12	

Describe recorded data (stream gage, monitoring well, aerial photos, previous inspections) if available:

Remarks: Area is a narrow linear non-tidal wetland fringe between tidal emergent wetlands and forested uplands

VEGETATION - Use scientific names					Sampling Point: DP10				
<u>Tree Stratum</u>		Plot size:		Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test Worksheet</b>		
<i>Nyssa sylvatica</i>		5	Y	FAC	Number of OBL, FACW and FAC species:			7	
<i>Acer rubrum</i>		5	Y	FAC	Total number of all dominant species:			9	
<i>Quercus falcata</i>		5	Y	FACU	% of OBL, FACW and FAC dominant species:			78	
<i>Quercus alba</i>		5	Y	FACU	<b>Prevalence Index Worksheet</b>				
					Total % cover		Multiplier	B-value	
					OBL species	10	1	10	
					FACW species	60	2	120	
					FAC species	95	3	285	
		20		Total Cover	FACU species	15	4	60	
					FACU species	15	4	60	
<u>Sapling Stratum</u>		Plot size:							
<i>Nyssa sylvatica</i>		35	Y	FAC	UPL species			0	
<i>Quercus nigra</i>		10	N	FAC	Column total			180	
<i>Quercus alba</i>		5	N	FACU	Prevalence Index:			2.64	
<i>Diospyros virginiana</i>		5	N	FAC	<b>Hydrophytic Vegetation Indicators</b>				
					<input checked="" type="checkbox"/> Dominance test is > 50%				
					<input checked="" type="checkbox"/> Prevalence index is ≤ 3.0				
					<input type="checkbox"/> Problematic hydrophytic vegetation				
		55		Total Cover	Explanation of problematic vegetation: Area is maintained as a power line easement				
<u>Shrub Stratum</u>		Plot size:							
<i>Ilex opaca</i>		10	Y	FAC	<b>Definitions of vegetation strata:</b>				
<i>Chamaecyparis thyoides</i>		10	Y	OBL	<b>Tree</b> - Woody plants, excluding woody vines, approx. 20 feet (6 m) or more in height and 3 inches (7.6 cm) or larger in diameter at breast height (DBH).				
<i>Baccharis halimifolia</i>		3	N	FAC	<b>Sapling</b> - Woody plants, excluding woody vines, approx. 20 feet (6 m) or more in height and less than 3 inches (7.6 cm) DBH.				
					<b>Shrub</b> - Woody plants, excluding woody vines, approx. 3 to 20 feet (1 to 6 m) in height.				
					<b>Herb</b> - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 feet (1 m) in height.				
					<b>Woody Vine</b> - All woody vines, regardless of height.				
		23		Total Cover	Remarks: (If observed, list morphological adaptations)				
<u>Herb Stratum</u>		Plot size:							
<i>Phragmites australis</i>		50	Y	FACW					
<i>Smilax rotundifolia</i>		20	Y	FAC					
<i>Teucrium canadense</i>		10	N	FACW					
<i>Baccharis halimifolia</i>		1	N	FAC					
<i>Acer rubrum</i>		1	N	FAC					
		82		Total cover					
<u>Woody Vine Stratum</u>		Plot size:							
		0		Total cover					

**Is Hydrophytic Vegetation Present?**

Yes

No

SOIL							Sampling Point: DP10	
Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type	Loc		
0-8	10YR 5/1	85	10YR 3/1 & 4/1	15	C	M	Lo Sd	
8-15	10YR 5/1	85	10YR 4/4 & 5/2	15	C	M	Lo Sd	
15-18	10YR 5/2	85	10YR 4/4 & 5/1	15	C	M	Lo Sd	
Types: C-concentration, D-depletion, RM-reduced matrix, CS covered or coated sand grains.							Locations: PL-pore lining, M-matrix	
Hydric Soil Indicators:					Indicators for Problematic Hydric Soils:			
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic epipedon (A2) <input type="checkbox"/> Black histic (A3) <input type="checkbox"/> Hydrogen sulfide (A4) <input type="checkbox"/> Stratified layers (A5) <input type="checkbox"/> Organic bodies (A6)(LRR P, T, U) <input type="checkbox"/> 5 cm mucky mineral (A7)(LRR U) <input type="checkbox"/> Muck presence (A8)(LRR U) <input type="checkbox"/> 1 cm muck (A9) (LRR P, T) <input type="checkbox"/> Depleted below dark surface (A11) <input type="checkbox"/> Thick dark surface (A12) <input type="checkbox"/> Coast prairie redox (A16)(MLRA 150A) <input type="checkbox"/> Sandy mucky mineral (S1)(LRR O, S) <input type="checkbox"/> Sandy gleyed matrix (S4) <input type="checkbox"/> Sandy redox (S5) <input type="checkbox"/> Stripped matrix (S6) <input type="checkbox"/> Dark surface (S7)(LRR P, S, T, U)		<input type="checkbox"/> Polyvalue below surface (S8)(LRR S, T, U) <input type="checkbox"/> Thin dark surface (S9)(LRR S, T, U) <input type="checkbox"/> Loamy mucky mineral (F1)(LRR O) <input type="checkbox"/> Loamy gleyed matrix (F2) <input checked="" type="checkbox"/> Depleted matrix (F3) <input type="checkbox"/> Redox dark surface (F6) <input type="checkbox"/> Depleted dark surface (F7) <input type="checkbox"/> Redox depressions (F8) <input type="checkbox"/> Marl (F10)(LRR U) <input type="checkbox"/> Depleted ochric (F11)(MLRA 151) <input type="checkbox"/> Fe-Mn masses (F12)(LRR O, P, T) <input type="checkbox"/> Umbric surface (F13)(LRR P, T, U) <input type="checkbox"/> Delta ochric (F17)(MLRA 151) <input type="checkbox"/> Reduced vertic (F18)(MLRA 150A, 150B) <input type="checkbox"/> Piedmont floodplain soils (F19)(MLRA 149A) <input type="checkbox"/> Anomalous bright loamy soils (F20) (MLRA 149A, 153C, 153D)		<input type="checkbox"/> 1 cm muck (A9)(LRR O) <input type="checkbox"/> 2 cm muck (A10)(LRR S) <input type="checkbox"/> Reduced vertic (F18) (outside MLRA 150A, B) <input type="checkbox"/> Piedmont floodplain soils (F19) (LRR P, S, T) <input type="checkbox"/> Anomalous bright loamy soils (F20) (MLRA 153B) <input type="checkbox"/> Red parent material (TF2) <input type="checkbox"/> Very shallow dark surface (TF12) (LRR T, U) <input type="checkbox"/> Other (explain in remarks)				
Restrictive Layer (if observed): Type: Depth (inches):					<b>Is Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Remarks:								

## WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Proposed 230kV USW Substation Site		City/County: Sussex County		Sampling Date: 05-04-21
Applicant/Owner: US Wind			State: Delaware	Sampling Point: DP11
Investigators: Craig Smith			Section/Township:	
Landform: Plain		Local relief: Flat	% Slope: 1-2%	
Subregion: MLRA 153D	Lat: 38.5873°N	Long: -75.2484°W	Datum:	
Soil Map Unit Name: Runclint loamy sand (RuA)				NWI Classification: UPL
Are climatic/hydrologic conditions on the site typical for this time of year?				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Is vegetation <input type="checkbox"/> soil <input type="checkbox"/> or hydrology <input type="checkbox"/> significantly disturbed?			Are "Normal Circumstances" present?	
Is vegetation <input type="checkbox"/> soil <input type="checkbox"/> or hydrology <input type="checkbox"/> naturally problematic?			Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

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

Hydrophytic vegetation present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric soil present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

Remarks:

### HYDROLOGY

#### Wetland Hydrology Indicators:

Primary indicators (minimum of one is required; check all that apply)	Secondary indicators (minimum of two required)
<input type="checkbox"/> Surface water (A1)	<input type="checkbox"/> Surface soil cracks (B6)
<input type="checkbox"/> High water table (A2)	<input type="checkbox"/> Sparsely vegetated concave surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage patterns (B10)
<input type="checkbox"/> Water marks (B1)	<input type="checkbox"/> Moss trim lines (B16)
<input type="checkbox"/> Sediment deposits (B2)	<input type="checkbox"/> Dry-season water table (C2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Crayfish burrows (C8)
<input type="checkbox"/> Algal mat or crust (B4)	<input type="checkbox"/> Saturation visible on aerial photos (C9)
<input type="checkbox"/> Iron deposits (B5)	<input type="checkbox"/> Geomorphic position (D2)
<input type="checkbox"/> Inundation visible on aerial photos (B7)	<input type="checkbox"/> Shallow aquitard (D3)
<input type="checkbox"/> Water-stained leaves (B9)	<input type="checkbox"/> FAC-neutral test (D5)
<input type="checkbox"/> Aquatic fauna (B13)	
<input type="checkbox"/> Marl deposits (B15) (LRR U)	
<input type="checkbox"/> Hydrogen sulfide odor (C1)	
<input type="checkbox"/> Oxidized rhizospheres on living roots (C3)	
<input type="checkbox"/> Presence of reduced iron (C4)	
<input type="checkbox"/> Recent iron reduction in tilled soils (C4)	
<input type="checkbox"/> Thick muck surface (C7)	
<input type="checkbox"/> Other (explain in remarks)	

#### Field Observations:

Surface water present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	<b>Is Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water table present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	
Saturation present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	
(includes capillary fringe)				

Describe recorded data (stream gage, monitoring well, aerial photos, previous inspections) if available:

Remarks: Forested upland adjacent to emergent tidal wetland



VEGETATION - Use scientific names		Absolute	Dominant	Indicator	Sampling Point: DP11			
<u>Tree Stratum</u>	Plot size:	% Cover	Species?	Status	Dominance Test Worksheet			
<i>Pinus taeda</i>		25	Y	FAC	Number of OBL, FACW and FAC species:		4	
<i>Quercus falcata</i>		20	Y	FACU	Total number of all dominant species:		5	
<i>Prunus serotina</i>		5	N	FACU	% of OBL, FACW and FAC dominant species:		80	
<i>Acer rubrum</i>		5	N	FAC	Prevalence Index Worksheet			
<i>Juglans nigra</i>		5	N	UPL	Total % cover	Multiplier	B-value	
					OBL species	0	1	0
					FACW species	5	2	10
		60	Total Cover		FAC species	90	3	270
<u>Sapling Stratum</u>	Plot size:				FACU species	47	4	188
<i>Acer rubrum</i>		20	Y	FAC	UPL species	15	5	75
<i>Diospyros virginiana</i>		15	Y	FAC	Column total	157		543
<i>Nyssa sylvatica</i>		10	N	FAC	Prevalence Index:		3.46	
<i>Cornus florida</i>		10	N	FACU	Hydrophytic Vegetation Indicators			
<i>Sassafras albidum</i>		5	N	FACU	<input type="checkbox"/>	Dominance test is > 50%		
<i>Magnolia virginiana</i>		5	N	FACW	<input type="checkbox"/>	Prevalence index is ≤ 3.0		
<i>Carya tomentosa</i>		5	N	UPL	<input type="checkbox"/>	Problematic hydrophytic vegetation		
		70	Total Cover		Explanation of problematic vegetation: Area is maintained as a power line easement			
<i>Quercus nigra</i>		5	N	FAC	Definitions of vegetation strata:			
<i>Prunus serotina</i>		5	N	FACU	<b>Tree</b> - Woody plants, excluding woody vines, approx. 20 feet (6 m) or more in height and 3 inches (7.6 cm) or larger in diameter at breast height (DBH).			
<i>Juglans nigra</i>		5	N	UPL	<b>Sapling</b> - Woody plants, excluding woody vines, approx. 20 feet (6 m) or more in height and less than 3 inches (7.6 cm) DBH.			
		15	Total Cover		<b>Shrub</b> - Woody plants, excluding woody vines, approx. 3 to 20 feet (1 to 6 m) in height.			
<u>Herb Stratum</u>	Plot size:				<b>Herb</b> - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 feet (1 m) in height.			
<i>Smilax rotundifolia</i>		10	Y	FAC	<b>Woody Vine</b> - All woody vines, regardless of height.			
<i>Vaccinium angustifolium</i>		2	N	FACU	Remarks: (If observed, list morphological adaptations)			
		12	Total cover					
<u>Woody Vine Stratum</u>	Plot size:				<b>Is Hydrophytic Vegetation Present?</b>			
					Yes	<input type="checkbox"/>		
		0	Total cover		No	<input checked="" type="checkbox"/>		

SOIL							Sampling Point: DP11					
Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)												
Depth (inches)	Matrix		Redox Features				Texture	Remarks				
	Color (moist)	%	Color (moist)	%	Type	Loc						
0-3	10YR 4/1	100					Sd Lo	High organic content				
3-10	10YR 6/1	85	10YR 4/1 & 4/4	15	C	M	Lo Sd					
10-18	10YR 4/3	85	10YR 5/4 & 6/3	15	C	M	Lo Sd					
Types: C-concentration, D-depletion, RM-reduced matrix, CS covered or coated sand grains.							Locations: PL-pore lining, M-matrix					
Hydric Soil Indicators:					Indicators for Problematic Hydric Soils:							
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic epipedon (A2) <input type="checkbox"/> Black histic (A3) <input type="checkbox"/> Hydrogen sulfide (A4) <input type="checkbox"/> Stratified layers (A5) <input type="checkbox"/> Organic bodies (A6)(LRR P, T, U) <input type="checkbox"/> 5 cm mucky mineral (A7)(LRR U) <input type="checkbox"/> Muck presence (A8)(LRR U) <input type="checkbox"/> 1 cm muck (A9) (LRR P, T) <input type="checkbox"/> Depleted below dark surface (A11) <input type="checkbox"/> Thick dark surface (A12) <input type="checkbox"/> Coast prairie redox (A16)(MLRA 150A) <input type="checkbox"/> Sandy mucky mineral (S1)(LRR O, S) <input type="checkbox"/> Sandy gleyed matrix (S4) <input type="checkbox"/> Sandy redox (S5) <input type="checkbox"/> Stripped matrix (S6) <input type="checkbox"/> Dark surface (S7)(LRR P, S, T, U)					<input type="checkbox"/> Polyvalue below surface (S8)(LRR S, T, U) <input type="checkbox"/> Thin dark surface (S9)(LRR S, T, U) <input type="checkbox"/> Loamy mucky mineral (F1)(LRR O) <input type="checkbox"/> Loamy gleyed matrix (F2) <input type="checkbox"/> Depleted matrix (F3) <input type="checkbox"/> Redox dark surface (F6) <input type="checkbox"/> Depleted dark surface (F7) <input type="checkbox"/> Redox depressions (F8) <input type="checkbox"/> Marl (F10)(LRR U) <input type="checkbox"/> Depleted ochric (F11)(MLRA 151) <input type="checkbox"/> Fe-Mn masses (F12)(LRR O, P, T) <input type="checkbox"/> Umbric surface (F13)(LRR P, T, U) <input type="checkbox"/> Delta ochric (F17)(MLRA 151) <input type="checkbox"/> Reduced vertic (F18)(MLRA 150A, 150B) <input type="checkbox"/> Piedmont floodplain soils (F19)(MLRA 149A) <input type="checkbox"/> Anomalous bright loamy soils (F20) (MLRA 149A, 153C, 153D)				<input type="checkbox"/> 1 cm muck (A9)(LRR O) <input type="checkbox"/> 2 cm muck (A10)(LRR S) <input type="checkbox"/> Reduced vertic (F18) (outside MLRA 150A, B) <input type="checkbox"/> Piedmont floodplain soils (F19) (LRR P, S, T) <input type="checkbox"/> Anomalous bright loamy soils (F20) (MLRA 153B) <input type="checkbox"/> Red parent material (TF2) <input type="checkbox"/> Very shallow dark surface (TF12) (LRR T, U) <input type="checkbox"/> Other (explain in remarks)			
Restrictive Layer (if observed): Type: Depth (inches):					<b>Is Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>							
Remarks:												

## WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Proposed 230kV USW Substation Site		City/County: Sussex County		Sampling Date: 05-04-21
Applicant/Owner: US Wind			State: Delaware	Sampling Point: DP12
Investigators: Craig Smith			Section/Township:	
Landform: Plain		Local relief: Flat	% Slope: 1-2%	
Subregion: MLRA 153D	Lat: 38.5852°N	Long: -75.2524°W	Datum:	
Soil Map Unit Name: Henlopen loamy sand (HpA)				NWI Classification: UPL
Are climatic/hydrologic conditions on the site typical for this time of year?				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Is vegetation <input type="checkbox"/> soil <input type="checkbox"/> or hydrology <input type="checkbox"/> significantly disturbed?			Are "Normal Circumstances" present?	
Is vegetation <input type="checkbox"/> soil <input type="checkbox"/> or hydrology <input type="checkbox"/> naturally problematic?			Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

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

Hydrophytic vegetation present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric soil present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

Remarks:

### HYDROLOGY

#### Wetland Hydrology Indicators:

Primary indicators (minimum of one is required; check all that apply)	Secondary indicators (minimum of two required)
<input type="checkbox"/> Surface water (A1)	<input type="checkbox"/> Surface soil cracks (B6)
<input type="checkbox"/> High water table (A2)	<input type="checkbox"/> Sparsely vegetated concave surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage patterns (B10)
<input type="checkbox"/> Water marks (B1)	<input type="checkbox"/> Moss trim lines (B16)
<input type="checkbox"/> Sediment deposits (B2)	<input type="checkbox"/> Dry-season water table (C2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Crayfish burrows (C8)
<input type="checkbox"/> Algal mat or crust (B4)	<input type="checkbox"/> Saturation visible on aerial photos (C9)
<input type="checkbox"/> Iron deposits (B5)	<input type="checkbox"/> Geomorphic position (D2)
<input type="checkbox"/> Inundation visible on aerial photos (B7)	<input type="checkbox"/> Shallow aquitard (D3)
<input type="checkbox"/> Water-stained leaves (B9)	<input type="checkbox"/> FAC-neutral test (D5)
<input type="checkbox"/> Aquatic fauna (B13)	
<input type="checkbox"/> Marl deposits (B15) (LRR U)	
<input type="checkbox"/> Hydrogen sulfide odor (C1)	
<input type="checkbox"/> Oxidized rhizospheres on living roots (C3)	
<input type="checkbox"/> Presence of reduced iron (C4)	
<input type="checkbox"/> Recent iron reduction in tilled soils (C4)	
<input type="checkbox"/> Thick muck surface (C7)	
<input type="checkbox"/> Other (explain in remarks)	

#### Field Observations:

Surface water present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	<b>Is Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water table present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	
Saturation present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	
(includes capillary fringe)				

Describe recorded data (stream gage, monitoring well, aerial photos, previous inspections) if available:

Remarks: Forested upland adjacent to riverbank

VEGETATION - Use scientific names		Absolute	Dominant	Indicator	Sampling Point: DP12			
<u>Tree Stratum</u>	Plot size:	% Cover	Species?	Status	<b>Dominance Test Worksheet</b>			
<i>Pinus taeda</i>		35	Y	FAC	Number of OBL, FACW and FAC species:		3	
<i>Diospyros virginiana</i>		15	Y	UPL	Total number of all dominant species:		6	
<i>Celtis occidentalis</i>		5	N	FACU	<b>% of OBL, FACW and FAC dominant species:</b>		50	
<i>Ilex opaca</i>		5	N	FAC	<b>Prevalence Index Worksheet</b>			
<i>Quercus nigra</i>		5	N	FAC	Total % cover	Multiplier	B-value	
<i>Quercus falcata</i>		5	N	FACU	OBL species	0	1	0
					FACW species	0	2	0
		70	Total Cover		FAC species	118	3	354
<u>Sapling Stratum</u>	Plot size:				FACU species	48	4	192
<i>Diospyros virginiana</i>		20	Y	FAC	UPL species	16	5	80
<i>Sassafras albidum</i>		10	Y	FACU	Column total	182		626
<i>Celtis occidentalis</i>		10	Y	FACU	<b>Prevalence Index:</b>		3.44	
<i>Prunus serotina</i>		5	N	FACU	<b>Hydrophytic Vegetation Indicators</b>			
<i>Acer rubrum</i>		3	N	FAC	<input type="checkbox"/> Dominance test is > 50%			
					<input type="checkbox"/> Prevalence index is ≤ 3.0			
					<input type="checkbox"/> Problematic hydrophytic vegetation			
		48	Total Cover		Explanation of problematic vegetation: Area is maintained as a power line easement			
<u>Shrub Stratum</u>	Plot size:				<b>Definitions of vegetation strata:</b>			
					<b>Tree</b> - Woody plants, excluding woody vines, approx. 20 feet (6 m) or more in height and 3 inches (7.6 cm) or larger in diameter at breast height (DBH).			
					<b>Sapling</b> - Woody plants, excluding woody vines, approx. 20 feet (6 m) or more in height and less than 3 inches (7.6 cm) DBH.			
					<b>Shrub</b> - Woody plants, excluding woody vines, approx. 3 to 20 feet (1 to 6 m) in height.			
<u>Herb Stratum</u>	Plot size:				<b>Herb</b> - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 feet (1 m) in height.			
<i>Smilax rotundifolia</i>		50	Y	FAC	<b>Woody Vine</b> - All woody vines, regardless of height.			
<i>Vaccinium angustifolium</i>		5	N	FACU	Remarks: (If observed, list morphological adaptations)			
<i>Lonicera japonica</i>		5	N	FACU				
<i>Ambrosia artemisiifolia</i>		2	N	FACU				
<i>Cradamine parviflora</i>		1	N	FACU				
<i>Oxalis corniculata</i>		1	N	UPL				
		64	Total cover		<b>Is Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
<u>Woody Vine Stratum</u>	Plot size:							
		0	Total cover					

SOIL							Sampling Point: DP12	
Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type	Loc		
0-2	10YR 3/2	90	10YR 4/2	10	C	M	Sd Lo	
2-5	10YR 3/3	90	10YR 4/3	10	C	M	Lo Sd	
5-12	10YR 4/4	85	10YR 5/4 & 3/2	15	C	M	Lo Sd	
12-18	10YR 6/4	85	10YR 6/2 & 6/3	15	C	M	Lo Sd	
Types: C-concentration, D-depletion, RM-reduced matrix, CS covered or coated sand grains.							Locations: PL-pore lining, M-matrix	
Hydric Soil Indicators:					Indicators for Problematic Hydric Soils:			
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic epipedon (A2) <input type="checkbox"/> Black histic (A3) <input type="checkbox"/> Hydrogen sulfide (A4) <input type="checkbox"/> Stratified layers (A5) <input type="checkbox"/> Organic bodies (A6)(LRR P, T, U) <input type="checkbox"/> 5 cm mucky mineral (A7)(LRR U) <input type="checkbox"/> Muck presence (A8)(LRR U) <input type="checkbox"/> 1 cm muck (A9) (LRR P, T) <input type="checkbox"/> Depleted below dark surface (A11) <input type="checkbox"/> Thick dark surface (A12) <input type="checkbox"/> Coast prairie redox (A16)(MLRA 150A) <input type="checkbox"/> Sandy mucky mineral (S1)(LRR O, S) <input type="checkbox"/> Sandy gleyed matrix (S4) <input type="checkbox"/> Sandy redox (S5) <input type="checkbox"/> Stripped matrix (S6) <input type="checkbox"/> Dark surface (S7)(LRR P, S, T, U)		<input type="checkbox"/> Polyvalue below surface (S8)(LRR S, T, U) <input type="checkbox"/> Thin dark surface (S9)(LRR S, T, U) <input type="checkbox"/> Loamy mucky mineral (F1)(LRR O) <input type="checkbox"/> Loamy gleyed matrix (F2) <input type="checkbox"/> Depleted matrix (F3) <input type="checkbox"/> Redox dark surface (F6) <input type="checkbox"/> Depleted dark surface (F7) <input type="checkbox"/> Redox depressions (F8) <input type="checkbox"/> Marl (F10)(LRR U) <input type="checkbox"/> Depleted ochric (F11)(MLRA 151) <input type="checkbox"/> Fe-Mn masses (F12)(LRR O, P, T) <input type="checkbox"/> Umbric surface (F13)(LRR P, T, U) <input type="checkbox"/> Delta ochric (F17)(MLRA 151) <input type="checkbox"/> Reduced vertic (F18)(MLRA 150A, 150B) <input type="checkbox"/> Piedmont floodplain soils (F19)(MLRA 149A) <input type="checkbox"/> Anomalous bright loamy soils (F20) (MLRA 149A, 153C, 153D)		<input type="checkbox"/> 1 cm muck (A9)(LRR O) <input type="checkbox"/> 2 cm muck (A10)(LRR S) <input type="checkbox"/> Reduced vertic (F18) (outside MLRA 150A, B) <input type="checkbox"/> Piedmont floodplain soils (F19) (LRR P, S, T) <input type="checkbox"/> Anomalous bright loamy soils (F20) (MLRA 153B) <input type="checkbox"/> Red parent material (TF2) <input type="checkbox"/> Very shallow dark surface (TF12) (LRR T, U) <input type="checkbox"/> Other (explain in remarks)				
Restrictive Layer (if observed): Type: Depth (inches):					<b>Is Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Remarks:								

## WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Proposed 230kV USW Substation Site		City/County: Sussex County		Sampling Date: 05-04-21
Applicant/Owner: US Wind			State: Delaware	Sampling Point: DP13
Investigators: Craig Smith			Section/Township:	
Landform: Plain		Local relief: Flat	% Slope: 0%	
Subregion: MLRA 153D	Lat: 38.5846°N	Long: -75.2511°W	Datum:	
Soil Map Unit Name: Manahawkin muck (Ma)				NWI Classification: PSS/PFO

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No

Is vegetation  soil  or hydrology  significantly disturbed? Are "Normal Circumstances" present?

Is vegetation  soil  or hydrology  naturally problematic? Yes  No

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

Hydrophytic vegetation present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric soil present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

Remarks:

### HYDROLOGY

#### Wetland Hydrology Indicators:

Primary indicators (minimum of one is required; check all that apply)	Secondary indicators (minimum of two required)
<input type="checkbox"/> Surface water (A1)	<input type="checkbox"/> Surface soil cracks (B6)
<input checked="" type="checkbox"/> High water table (A2)	<input type="checkbox"/> Sparsely vegetated concave surface (B8)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage patterns (B10)
<input type="checkbox"/> Water marks (B1)	<input type="checkbox"/> Moss trim lines (B16)
<input type="checkbox"/> Sediment deposits (B2)	<input type="checkbox"/> Dry-season water table (C2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Crayfish burrows (C8)
<input type="checkbox"/> Algal mat or crust (B4)	<input type="checkbox"/> Saturation visible on aerial photos (C9)
<input type="checkbox"/> Iron deposits (B5)	<input checked="" type="checkbox"/> Geomorphic position (D2)
<input type="checkbox"/> Inundation visible on aerial photos (B7)	<input type="checkbox"/> Shallow aquitard (D3)
<input type="checkbox"/> Water-stained leaves (B9)	<input checked="" type="checkbox"/> FAC-neutral test (D5)
<input type="checkbox"/> Aquatic fauna (B13)	
<input type="checkbox"/> Marl deposits (B15) (LRR U)	
<input type="checkbox"/> Hydrogen sulfide odor (C1)	
<input type="checkbox"/> Oxidized rhizospheres on living roots (C3)	
<input type="checkbox"/> Presence of reduced iron (C4)	
<input type="checkbox"/> Recent iron reduction in tilled soils (C4)	
<input type="checkbox"/> Thick muck surface (C7)	
<input type="checkbox"/> Other (explain in remarks)	

#### Field Observations:

Surface water present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	<b>Is Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water table present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Depth (inches) 18	
Saturation present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Depth (inches) 8	

Describe recorded data (stream gage, monitoring well, aerial photos, previous inspections) if available:

Remarks: Area is a narrow linear non-tidal wetland fringe between tidal emergent wetlands and forested uplands



SOIL							Sampling Point: DP13	
Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type	Loc		
0-3	10YR 2/1	100					Sd Lo	High organic content
3-8	10YR 6/2	100					Lo Sd	
8-15	10YR 5/3	100					Lo Sd	
15-18	10YR 6/3	100						
Types: C-concentration, D-depletion, RM-reduced matrix, CS covered or coated sand grains.							Locations: PL-pore lining, M-matrix	
Hydric Soil Indicators:					Indicators for Problematic Hydric Soils:			
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue below surface (S8)(LRR S, T, U)	<input type="checkbox"/> 1 cm muck (A9)(LRR O)		<input type="checkbox"/> 2 cm muck (A10)(LRR S) <input type="checkbox"/> Reduced vertic (F18) (outside MLRA 150A, B) <input type="checkbox"/> Piedmont floodplain soils (F19) (LRR P, S, T) <input type="checkbox"/> Anomalous bright loamy soils (F20) (MLRA 153B) <input type="checkbox"/> Red parent material (TF2) <input type="checkbox"/> Very shallow dark surface (TF12) (LRR T, U) <input type="checkbox"/> Other (explain in remarks)				
<input type="checkbox"/> Histic epipedon (A2)	<input checked="" type="checkbox"/> Thin dark surface (S9)(LRR S, T, U)	<input type="checkbox"/> 2 cm muck (A10)(LRR S)						
<input type="checkbox"/> Black histic (A3)	<input type="checkbox"/> Loamy mucky mineral (F1)(LRR O)	<input type="checkbox"/> Reduced vertic (F18)						
<input type="checkbox"/> Hydrogen sulfide (A4)	<input type="checkbox"/> Loamy gleyed matrix (F2)	<input type="checkbox"/> Piedmont floodplain soils (F19)						
<input type="checkbox"/> Stratified layers (A5)	<input checked="" type="checkbox"/> Depleted matrix (F3)	<input type="checkbox"/> (LRR P, S, T)						
<input type="checkbox"/> Organic bodies (A6)(LRR P, T, U)	<input type="checkbox"/> Redox dark surface (F6)	<input type="checkbox"/> Anomalous bright loamy soils (F20)						
<input type="checkbox"/> 5 cm mucky mineral (A7)(LRR U)	<input type="checkbox"/> Depleted dark surface (F7)	<input type="checkbox"/> (MLRA 153B)						
<input type="checkbox"/> Muck presence (A8)(LRR U)	<input type="checkbox"/> Redox depressions (F8)	<input type="checkbox"/> Red parent material (TF2)						
<input type="checkbox"/> 1 cm muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10)(LRR U)	<input type="checkbox"/> Very shallow dark surface (TF12)						
<input type="checkbox"/> Depleted below dark surface (A11)	<input type="checkbox"/> Depleted ochric (F11)(MLRA 151)	<input type="checkbox"/> (LRR T, U)						
<input type="checkbox"/> Thick dark surface (A12)	<input type="checkbox"/> Fe-Mn masses (F12)(LRR O, P, T)	<input type="checkbox"/> Other (explain in remarks)						
<input type="checkbox"/> Coast prairie redox (A16)(MLRA 150A)	<input type="checkbox"/> Umbric surface (F13)(LRR P, T, U)	Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.						
<input type="checkbox"/> Sandy mucky mineral (S1)(LRR O, S)	<input type="checkbox"/> Delta ochric (F17)(MLRA 151)							
<input type="checkbox"/> Sandy gleyed matrix (S4)	<input type="checkbox"/> Reduced vertic (F18)(MLRA 150A, 150B)							
<input type="checkbox"/> Sandy redox (S5)	<input type="checkbox"/> Piedmont floodplain soils (F19)(MLRA 149A)							
<input type="checkbox"/> Stripped matrix (S6)	<input type="checkbox"/> Anomalous bright loamy soils (F20)	(MLRA 149A, 153C, 153D)						
<input type="checkbox"/> Dark surface (S7)(LRR P, S, T, U)								
Restrictive Layer (if observed):					<b>Is Hydric Soil Present?</b>			
Type:					Yes <input checked="" type="checkbox"/>			
Depth (inches):					No <input type="checkbox"/>			
Remarks:								



## WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Proposed 230kV USW Substation Site		City/County: Sussex County		Sampling Date: 05-04-21
Applicant/Owner: US Wind			State: Delaware	Sampling Point: DP14
Investigators: Craig Smith			Section/Township:	
Landform: Plain		Local relief: Flat	% Slope: 2-3%	
Subregion: MLRA 153D	Lat: 38.5850°N	Long: -75.2511°W	Datum:	
Soil Map Unit Name: Henlopen loamy sand (HpB)				NWI Classification: UPL
Are climatic/hydrologic conditions on the site typical for this time of year?				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Is vegetation <input type="checkbox"/> soil <input type="checkbox"/> or hydrology <input type="checkbox"/> significantly disturbed?			Are "Normal Circumstances" present?	
Is vegetation <input type="checkbox"/> soil <input type="checkbox"/> or hydrology <input type="checkbox"/> naturally problematic?			Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

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

Hydrophytic vegetation present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric soil present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

Remarks:

### HYDROLOGY

#### Wetland Hydrology Indicators:

Primary indicators (minimum of one is required; check all that apply)	Secondary indicators (minimum of two required)
<input type="checkbox"/> Surface water (A1)	<input type="checkbox"/> Surface soil cracks (B6)
<input type="checkbox"/> High water table (A2)	<input type="checkbox"/> Sparsely vegetated concave surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage patterns (B10)
<input type="checkbox"/> Water marks (B1)	<input type="checkbox"/> Moss trim lines (B16)
<input type="checkbox"/> Sediment deposits (B2)	<input type="checkbox"/> Dry-season water table (C2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Crayfish burrows (C8)
<input type="checkbox"/> Algal mat or crust (B4)	<input type="checkbox"/> Saturation visible on aerial photos (C9)
<input type="checkbox"/> Iron deposits (B5)	<input type="checkbox"/> Geomorphic position (D2)
<input type="checkbox"/> Inundation visible on aerial photos (B7)	<input type="checkbox"/> Shallow aquitard (D3)
<input type="checkbox"/> Water-stained leaves (B9)	<input type="checkbox"/> FAC-neutral test (D5)
<input type="checkbox"/> Aquatic fauna (B13)	
<input type="checkbox"/> Marl deposits (B15) (LRR U)	
<input type="checkbox"/> Hydrogen sulfide odor (C1)	
<input type="checkbox"/> Oxidized rhizospheres on living roots (C3)	
<input type="checkbox"/> Presence of reduced iron (C4)	
<input type="checkbox"/> Recent iron reduction in tilled soils (C4)	
<input type="checkbox"/> Thick muck surface (C7)	
<input type="checkbox"/> Other (explain in remarks)	

#### Field Observations:

Surface water present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	<b>Is Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water table present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	
Saturation present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	
(includes capillary fringe)				

Describe recorded data (stream gage, monitoring well, aerial photos, previous inspections) if available:

Remarks: Forested upland adjacent to emergent tidal wetland

VEGETATION - Use scientific names		Absolute	Dominant	Indicator	Sampling Point: DP14		
<u>Tree Stratum</u>	Plot size:	% Cover	Species?	Status	<b>Dominance Test Worksheet</b>		
<i>Pinus taeda</i>		20	Y	FAC	Number of OBL, FACW and FAC species:		4
<i>Quercus falcata</i>		20	Y	FACU	Total number of all dominant species:		6
<i>Quercus nigra</i>		10	N	FAC	<b>% of OBL, FACW and FAC dominant species:</b>		67
<i>Acer rubrum</i>		10	N	FAC	<b>Prevalence Index Worksheet</b>		
<i>Sassafras albidum</i>		5	N	FACU	Total % cover	Multiplier	B-value
					OBL species	0	1 0
					FACW species	0	2 0
		65	Total Cover		FAC species	100	3 300
					FACU species	41	4 164
<u>Sapling Stratum</u>	Plot size:				FAC species	100	3 300
<i>Acer rubrum</i>		25	Y	FAC	FACU species	41	4 164
<i>Nyssa sylvatica</i>		5	N	FAC	UPL species	0	5 0
					Column total	141	464
					<b>Prevalence Index:</b>		3.29
					<b>Hydrophytic Vegetation Indicators</b>		
					<input type="checkbox"/>	Dominance test is > 50%	
					<input type="checkbox"/>	Prevalence index is ≤ 3.0	
					<input type="checkbox"/>	Problematic hydrophytic vegetation	
		30	Total Cover		Explanation of problematic vegetation: Area is maintained as a power line easement		
<u>Shrub Stratum</u>	Plot size:				<b>Definitions of vegetation strata:</b>		
<i>Ilex opaca</i>		5	Y	FAC	<b>Tree</b> - Woody plants, excluding woody vines, approx. 20 feet (6 m) or more in height and 3 inches (7.6 cm) or larger in diameter at breast height (DBH).		
					<b>Sapling</b> - Woody plants, excluding woody vines, approx. 20 feet (6 m) or more in height and less than 3 inches (7.6 cm) DBH.		
					<b>Shrub</b> - Woody plants, excluding woody vines, approx. 3 to 20 feet (1 to 6 m) in height.		
		5	Total Cover		<b>Herb</b> - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 feet (1 m) in height.		
<u>Herb Stratum</u>	Plot size:				<b>Woody Vine</b> - All woody vines, regardless of height.		
<i>Smilax rotundifolia</i>		25	Y	FAC	Remarks: (If observed, list morphological adaptations)		
<i>Vaccinium angustifolium</i>		15	Y	FACU			
<i>Sassafras albidum</i>		1	N	FACU			
		41	Total cover				
<u>Woody Vine Stratum</u>	Plot size:				<b>Is Hydrophytic Vegetation Present?</b>		
					Yes	<input type="checkbox"/>	
					No	<input checked="" type="checkbox"/>	
		0	Total cover				

SOIL							Sampling Point: DP14	
Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type	Loc		
0-3	10YR 3/2	100					Sd Lo	High organic content
3-6	10YR 4/4	85	10YR 5/3 & 6/2	15	C	M	Lo Sd	
6-15	10YR 5/3	85	10YR 5/4 & 5/6	15	C	M	Lo Sd	
15-18	10YR 5/4	85	10YR 5/3 & 5/6	15	C	M	Lo Sd	
Types: C-concentration, D-depletion, RM-reduced matrix, CS covered or coated sand grains.							Locations: PL-pore lining, M-matrix	
Hydric Soil Indicators:					Indicators for Problematic Hydric Soils:			
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic epipedon (A2) <input type="checkbox"/> Black histic (A3) <input type="checkbox"/> Hydrogen sulfide (A4) <input type="checkbox"/> Stratified layers (A5) <input type="checkbox"/> Organic bodies (A6)(LRR P, T, U) <input type="checkbox"/> 5 cm mucky mineral (A7)(LRR U) <input type="checkbox"/> Muck presence (A8)(LRR U) <input type="checkbox"/> 1 cm muck (A9) (LRR P, T) <input type="checkbox"/> Depleted below dark surface (A11) <input type="checkbox"/> Thick dark surface (A12) <input type="checkbox"/> Coast prairie redox (A16)(MLRA 150A) <input type="checkbox"/> Sandy mucky mineral (S1)(LRR O, S) <input type="checkbox"/> Sandy gleyed matrix (S4) <input type="checkbox"/> Sandy redox (S5) <input type="checkbox"/> Stripped matrix (S6) <input type="checkbox"/> Dark surface (S7)(LRR P, S, T, U)		<input type="checkbox"/> Polyvalue below surface (S8)(LRR S, T, U) <input type="checkbox"/> Thin dark surface (S9)(LRR S, T, U) <input type="checkbox"/> Loamy mucky mineral (F1)(LRR O) <input type="checkbox"/> Loamy gleyed matrix (F2) <input type="checkbox"/> Depleted matrix (F3) <input type="checkbox"/> Redox dark surface (F6) <input type="checkbox"/> Depleted dark surface (F7) <input type="checkbox"/> Redox depressions (F8) <input type="checkbox"/> Marl (F10)(LRR U) <input type="checkbox"/> Depleted ochric (F11)(MLRA 151) <input type="checkbox"/> Fe-Mn masses (F12)(LRR O, P, T) <input type="checkbox"/> Umbric surface (F13)(LRR P, T, U) <input type="checkbox"/> Delta ochric (F17)(MLRA 151) <input type="checkbox"/> Reduced vertic (F18)(MLRA 150A, 150B) <input type="checkbox"/> Piedmont floodplain soils (F19)(MLRA 149A) <input type="checkbox"/> Anomalous bright loamy soils (F20) (MLRA 149A, 153C, 153D)		<input type="checkbox"/> 1 cm muck (A9)(LRR O) <input type="checkbox"/> 2 cm muck (A10)(LRR S) <input type="checkbox"/> Reduced vertic (F18) (outside MLRA 150A, B) <input type="checkbox"/> Piedmont floodplain soils (F19) (LRR P, S, T) <input type="checkbox"/> Anomalous bright loamy soils (F20) (MLRA 153B) <input type="checkbox"/> Red parent material (TF2) <input type="checkbox"/> Very shallow dark surface (TF12) (LRR T, U) <input type="checkbox"/> Other (explain in remarks)				
Restrictive Layer (if observed): Type: Depth (inches):					<b>Is Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Remarks:								

## WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Proposed 230kV USW Substation Site		City/County: Sussex County		Sampling Date: 05-04-21
Applicant/Owner: US Wind			State: Delaware	Sampling Point: DP15
Investigators: Craig Smith			Section/Township:	
Landform: Plain		Local relief: Flat	% Slope: 2-3%	
Subregion: MLRA 153D	Lat: 38.5846°N	Long: -75.2458°W	Datum:	
Soil Map Unit Name: Henlopen loamy sand (HpB)				NWI Classification: UPL
Are climatic/hydrologic conditions on the site typical for this time of year?				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Is vegetation <input type="checkbox"/> soil <input type="checkbox"/> or hydrology <input type="checkbox"/> significantly disturbed?			Are "Normal Circumstances" present?	
Is vegetation <input type="checkbox"/> soil <input type="checkbox"/> or hydrology <input type="checkbox"/> naturally problematic?			Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

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

Hydrophytic vegetation present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric soil present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

Remarks:

### HYDROLOGY

#### Wetland Hydrology Indicators:

Primary indicators (minimum of one is required; check all that apply)	Secondary indicators (minimum of two required)
<input type="checkbox"/> Surface water (A1)	<input type="checkbox"/> Surface soil cracks (B6)
<input type="checkbox"/> High water table (A2)	<input type="checkbox"/> Sparsely vegetated concave surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage patterns (B10)
<input type="checkbox"/> Water marks (B1)	<input type="checkbox"/> Moss trim lines (B16)
<input type="checkbox"/> Sediment deposits (B2)	<input type="checkbox"/> Dry-season water table (C2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Crayfish burrows (C8)
<input type="checkbox"/> Algal mat or crust (B4)	<input type="checkbox"/> Saturation visible on aerial photos (C9)
<input type="checkbox"/> Iron deposits (B5)	<input type="checkbox"/> Geomorphic position (D2)
<input type="checkbox"/> Inundation visible on aerial photos (B7)	<input type="checkbox"/> Shallow aquitard (D3)
<input type="checkbox"/> Water-stained leaves (B9)	<input type="checkbox"/> FAC-neutral test (D5)
<input type="checkbox"/> Aquatic fauna (B13)	
<input type="checkbox"/> Marl deposits (B15) (LRR U)	
<input type="checkbox"/> Hydrogen sulfide odor (C1)	
<input type="checkbox"/> Oxidized rhizospheres on living roots (C3)	
<input type="checkbox"/> Presence of reduced iron (C4)	
<input type="checkbox"/> Recent iron reduction in tilled soils (C4)	
<input type="checkbox"/> Thick muck surface (C7)	
<input type="checkbox"/> Other (explain in remarks)	

#### Field Observations:

Surface water present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	<b>Is Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water table present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	
Saturation present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	
(includes capillary fringe)				

Describe recorded data (stream gage, monitoring well, aerial photos, previous inspections) if available:

Remarks: Forested upland adjacent to emergent tidal wetland

VEGETATION - Use scientific names		Absolute	Dominant	Indicator	Sampling Point: DP15			
<u>Tree Stratum</u>	Plot size:	% Cover	Species?	Status	<b>Dominance Test Worksheet</b>			
<i>Quercus velutina</i>		30	Y	UPL	Number of OBL, FACW and FAC species:			2
<i>Pinus taeda</i>		15	Y	FAC	Total number of all dominant species:			5
<i>Quercus coccinea</i>		10	N	UPL	<b>% of OBL, FACW and FAC dominant species:</b>			40
<i>Quercus alba</i>		10	N	FACU	<b>Prevalence Index Worksheet</b>			
					Total % cover		Multiplier	B-value
					OBL species	0	1	0
					FACW species	0	2	0
		65	Total Cover		FAC species	45	3	135
<u>Sapling Stratum</u>	Plot size:				FACU species	105	4	420
<i>Sassafras albidum</i>		15	Y	FACU	UPL species	60	5	300
<i>Carya tomentosa</i>		10	N	UPL	Column total	210		855
<i>Pinus taeda</i>		10	N	FAC	<b>Prevalence Index:</b>			4.07
<i>Diospyros virginiana</i>		10	N	FAC	<b>Hydrophytic Vegetation Indicators</b>			
<i>Pinus virginiana</i>		10	N	UPL	<input type="checkbox"/>	Dominance test is > 50%		
<i>Carya cordiformis</i>		5	N	FAC	<input type="checkbox"/>	Prevalence index is ≤ 3.0		
<i>Quercus alba</i>		5	N	FACU	<input type="checkbox"/>	Problematic hydrophytic vegetation		
		65	Total Cover		Explanation of problematic vegetation: Area is maintained as a power line easement			
<u>Shrub Stratum</u>	Plot size:				<b>Definitions of vegetation strata:</b>			
<i>Ilex opaca</i>		5	Y	FAC	<b>Tree</b> - Woody plants, excluding woody vines, approx. 20 feet (6 m) or more in height and 3 inches (7.6 cm) or larger in diameter at breast height (DBH).			
					<b>Sapling</b> - Woody plants, excluding woody vines, approx. 20 feet (6 m) or more in height and less than 3 inches (7.6 cm) DBH.			
					<b>Shrub</b> - Woody plants, excluding woody vines, approx. 3 to 20 feet (1 to 6 m) in height.			
		5	Total Cover		<b>Herb</b> - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 feet (1 m) in height.			
<u>Herb Stratum</u>	Plot size:				<b>Woody Vine</b> - All woody vines, regardless of height.			
<i>Vaccinium angustifolium</i>		75	Y	FACU	Remarks: (If observed, list morphological adaptations)			
		75	Total cover					
<u>Woody Vine Stratum</u>	Plot size:				<b>Is Hydrophytic Vegetation Present?</b>			
					Yes <input type="checkbox"/>			
					No <input checked="" type="checkbox"/>			
		0	Total cover					

SOIL							Sampling Point: DP15	
Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type	Loc		
0-2	10YR 3/2	100					Sd Lo	High organic content
2-8	10YR 5/2	85	10YR 6/1 & 5/4	15	C	M	Lo Sd	
8-12	10YR 6/2	85	10YR 6/1 & 5/4	15	C	M	Lo Sd	
12-18	10YR 5/4	85	10YR 6/6 & 5/1	15	C	M	Lo Sd	
Types: C-concentration, D-depletion, RM-reduced matrix, CS covered or coated sand grains.							Locations: PL-pore lining, M-matrix	
Hydric Soil Indicators:					Indicators for Problematic Hydric Soils:			
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic epipedon (A2) <input type="checkbox"/> Black histic (A3) <input type="checkbox"/> Hydrogen sulfide (A4) <input type="checkbox"/> Stratified layers (A5) <input type="checkbox"/> Organic bodies (A6)(LRR P, T, U) <input type="checkbox"/> 5 cm mucky mineral (A7)(LRR U) <input type="checkbox"/> Muck presence (A8)(LRR U) <input type="checkbox"/> 1 cm muck (A9) (LRR P, T) <input type="checkbox"/> Depleted below dark surface (A11) <input type="checkbox"/> Thick dark surface (A12) <input type="checkbox"/> Coast prairie redox (A16)(MLRA 150A) <input type="checkbox"/> Sandy mucky mineral (S1)(LRR O, S) <input type="checkbox"/> Sandy gleyed matrix (S4) <input type="checkbox"/> Sandy redox (S5) <input type="checkbox"/> Stripped matrix (S6) <input type="checkbox"/> Dark surface (S7)(LRR P, S, T, U)		<input type="checkbox"/> Polyvalue below surface (S8)(LRR S, T, U) <input type="checkbox"/> Thin dark surface (S9)(LRR S, T, U) <input type="checkbox"/> Loamy mucky mineral (F1)(LRR O) <input type="checkbox"/> Loamy gleyed matrix (F2) <input type="checkbox"/> Depleted matrix (F3) <input type="checkbox"/> Redox dark surface (F6) <input type="checkbox"/> Depleted dark surface (F7) <input type="checkbox"/> Redox depressions (F8) <input type="checkbox"/> Marl (F10)(LRR U) <input type="checkbox"/> Depleted ochric (F11)(MLRA 151) <input type="checkbox"/> Fe-Mn masses (F12)(LRR O, P, T) <input type="checkbox"/> Umbric surface (F13)(LRR P, T, U) <input type="checkbox"/> Delta ochric (F17)(MLRA 151) <input type="checkbox"/> Reduced vertic (F18)(MLRA 150A, 150B) <input type="checkbox"/> Piedmont floodplain soils (F19)(MLRA 149A) <input type="checkbox"/> Anomalous bright loamy soils (F20) (MLRA 149A, 153C, 153D)		<input type="checkbox"/> 1 cm muck (A9)(LRR O) <input type="checkbox"/> 2 cm muck (A10)(LRR S) <input type="checkbox"/> Reduced vertic (F18) (outside MLRA 150A, B) <input type="checkbox"/> Piedmont floodplain soils (F19) (LRR P, S, T) <input type="checkbox"/> Anomalous bright loamy soils (F20) (MLRA 153B) <input type="checkbox"/> Red parent material (TF2) <input type="checkbox"/> Very shallow dark surface (TF12) (LRR T, U) <input type="checkbox"/> Other (explain in remarks)				
Restrictive Layer (if observed): Type: Depth (inches):					<b>Is Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Remarks:								

## WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Proposed 230kV USW Substation Site		City/County: Sussex County		Sampling Date: 05-04-21
Applicant/Owner: US Wind			State: Delaware	Sampling Point: DP16
Investigators: Craig Smith			Section/Township:	
Landform: Plain		Local relief: Flat	% Slope: 2-5%	
Subregion: MLRA 153D	Lat: 38.5843°N	Long: -75.2446°W	Datum:	
Soil Map Unit Name: Henlopen loamy sand (HpB)				NWI Classification: UPL
Are climatic/hydrologic conditions on the site typical for this time of year?				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Is vegetation <input type="checkbox"/> soil <input type="checkbox"/> or hydrology <input type="checkbox"/> significantly disturbed?			Are "Normal Circumstances" present?	
Is vegetation <input type="checkbox"/> soil <input type="checkbox"/> or hydrology <input type="checkbox"/> naturally problematic?			Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

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

Hydrophytic vegetation present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric soil present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

Remarks:

### HYDROLOGY

#### Wetland Hydrology Indicators:

Primary indicators (minimum of one is required; check all that apply)	Secondary indicators (minimum of two required)
<input type="checkbox"/> Surface water (A1)	<input type="checkbox"/> Surface soil cracks (B6)
<input type="checkbox"/> High water table (A2)	<input type="checkbox"/> Sparsely vegetated concave surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage patterns (B10)
<input type="checkbox"/> Water marks (B1)	<input type="checkbox"/> Moss trim lines (B16)
<input type="checkbox"/> Sediment deposits (B2)	<input type="checkbox"/> Dry-season water table (C2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Crayfish burrows (C8)
<input type="checkbox"/> Algal mat or crust (B4)	<input type="checkbox"/> Saturation visible on aerial photos (C9)
<input type="checkbox"/> Iron deposits (B5)	<input type="checkbox"/> Geomorphic position (D2)
<input type="checkbox"/> Inundation visible on aerial photos (B7)	<input type="checkbox"/> Shallow aquitard (D3)
<input type="checkbox"/> Water-stained leaves (B9)	<input type="checkbox"/> FAC-neutral test (D5)
<input type="checkbox"/> Aquatic fauna (B13)	
<input type="checkbox"/> Marl deposits (B15) (LRR U)	
<input type="checkbox"/> Hydrogen sulfide odor (C1)	
<input type="checkbox"/> Oxidized rhizospheres on living roots (C3)	
<input type="checkbox"/> Presence of reduced iron (C4)	
<input type="checkbox"/> Recent iron reduction in tilled soils (C4)	
<input type="checkbox"/> Thick muck surface (C7)	
<input type="checkbox"/> Other (explain in remarks)	

#### Field Observations:

Surface water present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	<b>Is Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water table present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	
Saturation present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches)	
(includes capillary fringe)				

Describe recorded data (stream gage, monitoring well, aerial photos, previous inspections) if available:

Remarks: Forested upland adjacent to emergent tidal wetland

<b>VEGETATION - Use scientific names</b>		Absolute	Dominant	Indicator	Sampling Point: DP15		
<u>Tree Stratum</u>	Plot size:	% Cover	Species?	Status	<b>Dominance Test Worksheet</b>		
<i>Pinus taeda</i>		20	Y	FAC	Number of OBL, FACW and FAC species:		1
<i>Carya tomentosa</i>		15	Y	UPL	Total number of all dominant species:		6
<i>Quercus alba</i>		10	N	FACU	<b>% of OBL, FACW and FAC dominant species:</b>		17
<i>Pinus virginiana</i>		10	N	UPL	<b>Prevalence Index Worksheet</b>		
<i>Sassafras albidum</i>		5	N	FACU	Total % cover		Multiplier
<i>Quercus falcata</i>		5	N	FACU	OBL species	0	1
					FACW species	0	2
		65	Total Cover		FAC species	29	3
<u>Sapling Stratum</u>	Plot size:				FACU species	91	4
<i>Carya tomentosa</i>		35	Y	UPL	UPL species	63	5
<i>Cornus florida</i>		15	Y	FACU	Column total	183	766
<i>Sassafras albidum</i>		10	N	FACU	<b>Prevalence Index:</b>		4.19
<i>Acer rubrum</i>		5	N	FAC	<b>Hydrophytic Vegetation Indicators</b>		
<i>Diospyros virginiana</i>		3	N	FAC	<input type="checkbox"/>	Dominance test is > 50%	
<i>Pinus taeda</i>		3	N	UPL	<input type="checkbox"/>	Prevalence index is ≤ 3.0	
					<input type="checkbox"/>	Problematic hydrophytic vegetation	
		71	Total Cover		Explanation of problematic vegetation:		
<u>Shrub Stratum</u>	Plot size:				Area is maintained as a power line easement		
<i>Hammamelis virginiana</i>		20	Y	FACU	<b>Definitions of vegetation strata:</b>		
					<b>Tree</b> - Woody plants, excluding woody vines, approx.		
					20 feet (6 m) or more in height and 3 inches (7.6 cm) or larger in diameter at breast height (DBH).		
					<b>Sapling</b> - Woody plants, excluding woody vines, approx.		
					20 feet (6 m) or more in height and less than 3 inches (7.6 cm) DBH.		
		20	Total Cover		<b>Shrub</b> - Woody plants, excluding woody vines, approx.		
<u>Herb Stratum</u>	Plot size:				3 to 20 feet (1 to 6 m) in height.		
<i>Vaccinium angustifolium</i>		25	Y	FACU	<b>Herb</b> - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately		
<i>Acer rubrum</i>		1	N	FAC	3 feet (1 m) in height.		
<i>Hammamelis virginiana</i>		1	N	FACU	<b>Woody Vine</b> - All woody vines, regardless of height.		
					Remarks: (If observed, list morphological adaptations)		
		27	Total cover				
<u>Woody Vine Stratum</u>	Plot size:				<b>Is Hydrophytic Vegetation Present?</b>		
					Yes <input type="checkbox"/>		
					No <input checked="" type="checkbox"/>		
		0	Total cover				



<b>SOIL</b>							Sampling Point: DP15	
<b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)</b>								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type	Loc		
0-1	10YR 3/3	100					Sd Lo	High organic content
1-2	10YR 5/2	100					Lo Sd	
2-4	10YR 5/3	90	10YR 5/2	10	C	M	Lo Sd	
4-12	10YR 6/4	85	10YR 6/2 & 6/6	15	C	M	Lo Sd	
12-18	10YR 6/4	90	10YR 6/3	10	C	M	Lo Sd	
Types: C-concentration, D-depletion, RM-reduced matrix, CS covered or coated sand grains.							Locations: PL-pore lining, M-matrix	
<b>Hydric Soil Indicators:</b>					<b>Indicators for Problematic Hydric Soils:</b>			
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Polyvalue below surface (S8)(LRR S, T, U)	<input type="checkbox"/> 1 cm muck (A9)(LRR O)				
<input type="checkbox"/> Histic epipedon (A2)			<input type="checkbox"/> Thin dark surface (S9)(LRR S, T, U)	<input type="checkbox"/> 2 cm muck (A10)(LRR S)				
<input type="checkbox"/> Black histic (A3)			<input type="checkbox"/> Loamy mucky mineral (F1)(LRR O)	<input type="checkbox"/> Reduced vertic (F18) (outside MLRA 150A, B)				
<input type="checkbox"/> Hydrogen sulfide (A4)			<input type="checkbox"/> Loamy gleyed matrix (F2)	<input type="checkbox"/> Piedmont floodplain soils (F19) (LRR P, S, T)				
<input type="checkbox"/> Stratified layers (A5)			<input type="checkbox"/> Depleted matrix (F3)	<input type="checkbox"/> Anomalous bright loamy soils (F20) (MLRA 153B)				
<input type="checkbox"/> Organic bodies (A6)(LRR P, T, U)			<input type="checkbox"/> Redox dark surface (F6)	<input type="checkbox"/> Red parent material (TF2)				
<input type="checkbox"/> 5 cm mucky mineral (A7)(LRR U)			<input type="checkbox"/> Depleted dark surface (F7)	<input type="checkbox"/> Very shallow dark surface (TF12) (LRR T, U)				
<input type="checkbox"/> Muck presence (A8)(LRR U)			<input type="checkbox"/> Redox depressions (F8)	<input type="checkbox"/> Other (explain in remarks)				
<input type="checkbox"/> 1 cm muck (A9) (LRR P, T)			<input type="checkbox"/> Marl (F10)(LRR U)	Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.				
<input type="checkbox"/> Depleted below dark surface (A11)			<input type="checkbox"/> Depleted ochric (F11)(MLRA 151)					
<input type="checkbox"/> Thick dark surface (A12)			<input type="checkbox"/> Fe-Mn masses (F12)(LRR O, P, T)					
<input type="checkbox"/> Coast prairie redox (A16)(MLRA 150A)			<input type="checkbox"/> Umbric surface (F13)(LRR P, T, U)					
<input type="checkbox"/> Sandy mucky mineral (S1)(LRR O, S)			<input type="checkbox"/> Delta ochric (F17)(MLRA 151)					
<input type="checkbox"/> Sandy gleyed matrix (S4)			<input type="checkbox"/> Reduced vertic (F18)(MLRA 150A, 150B)					
<input type="checkbox"/> Sandy redox (S5)			<input type="checkbox"/> Piedmont floodplain soils (F19)(MLRA 149A)					
<input type="checkbox"/> Stripped matrix (S6)			<input type="checkbox"/> Anomalous bright loamy soils (F20) (MLRA 149A, 153C, 153D)					
<input type="checkbox"/> Dark surface (S7)(LRR P, S, T, U)								
Restrictive Layer (if observed):								<b>Is Hydric Soil Present?</b>
Type:					Yes <input type="checkbox"/>			
Depth (inches):					No <input checked="" type="checkbox"/>			
Remarks:								

# WETLAND PLAN