

Appendix AC –Wetland Delineation Report

COP Appendix AC contains a compilation of the following wetland and watercourse delineation reports developed for the Project.

File 1 of 3 contains:

- Oyster Creek Wetland and Watercourse Delineation Report
 - Oyster Creek and Oyster Creek Generating Station Block 100, Lot 1.05; Block 1001, Lot 4.02; Block 1001, Lot 4.06; Block 1001, Lot 4.05; Block 41, Lot 43; Block 63, Lot 7; Block 100, Lot 1.05; Block 1000, Lot 1; and Block 61.01, Lot 1
 - o Island Beach State Park Block 1750, Lot 1
- BL England Wetland and Watercourse Delineation Report
 - BL England and Roosevelt Boulevard- Block 1750, Lot 1, Block 3350.01, Lot 17, Block 3350.01, Lot 17.01

File 2 of 3 contains:

Photologs for Oyster Creek and BL England

File 3 of 3 contains:

- Supplemental Wetland Reports
 - o Oyster Creek Supplemental Wetland and Watercourse Delineation Report
 - Oyster Creek Export Cable Route Alternatives- Block 97, Lot 4; Block 97, Lot 3; Block 41, Lot 40.02; Block 41, Lot 2; Block 141, Lot 4.02; Block 99, Lot 3; Lighthouse Drive road ROW
 - o B.L. England Substation Wetland Supplemental Delineation Report
 - Tax Block 479, Lot 76
 - o Island Beach State Park Wetland Delineation Memo



Wetland Delineation Reports



Oyster Creek



Ocean Wind - Oyster Creek

Wetland and Watercourse Delineation Report

Oyster Creek and Oyster Creek Generating Station- Block 100, Lot 1.05; Block 1001, Lot 4.02; Block 1001, Lot 4.06; Block 1001, Lot 4.05; Block 41, Lot 43; Block 63, Lot 7; Block 100, Lot 1.05; Block 1000, Lot 1; and Block 61.01, Lot 1;

Island Beach State Park- Block 1750, Lot 1



Document Version

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1. Project Description

Ocean Wind LLC (Ocean Wind), a subsidiary of Ørsted Wind Power North America LLC (Ørsted) [formerly Dong Energy Wind Power (U.S.) Inc.] is developing the Ocean Wind Offshore Wind Farm Project (OCW01) pursuant to the Bureau of Ocean Energy Management (BOEM) requirements for the commercial lease of submerged lands for renewable energy development on the outer continental shelf (Lease Area OCS-A-0498). Ocean Wind intends to develop, build, operate, and own (through one or more affiliated special purpose entities) a utility-scale offshore wind farm located approximately 15 miles off the coast of New Jersey within the OCS-A 0498 Lease area (the "Project") (**Figure 1-1**).

As a part of Project development, Ocean Wind is looking to best utilize the available points of interconnection to the onshore grid. One potential point of interconnection "Oyster Creek" which includes the Oyster Creek Generating Station (OCGS), where the proposed Onshore Substation Location is located. To support the evaluation of this site as a potential interconnection location, a wetland/watercourse delineation and ecological community assessment was completed within the WRA for the Oyster Creek Landing (herein after referred to as the OC WRA). The OC WRA includes two distinct areas on both sides of State Route 9, in Lacey Township, Ocean County, NJ (Figure 1-1). The total area assessed was 1,112.2 acres. The OC WRA is located within two parcels currently owned by Holtec (formerly Exelon). The Holtec parcels extend from Barnegat Bay west past Route 9 (Block 100, Lot 1.05 and Block 1001, Lot 4.02) (Figure 1-1). The western portion of the WRA includes the southern portion of the Holtec parcel (Block 1001, Lot 4.02) associated with the OCGS. This area is bounded by the OCGS to the north and west, Oyster Creek to the south, and Route 9 to the east (Figure 1-1). The eastern portion of the OC WRA is located on the southern portion of Block 100, Lot 1.05. This area lies bounded by mixed pine barrens/oak-dominated forests to the north, Oyster Creek to the south and east, and Route 9 to the west.

The OC WRA includes parcels associated or adjacent to the OCGS that are within a 200-foot buffer from the proposed onshore export cable route. These collective parcels will be referred to as the "OCGS Site" for the remainder of this report. The OCGS Site lies bounded by the Forked River to the north and Oyster Creek to the south, lands owned by Holtec and residential development to the east, and Garden State Parkway to the west (**Figure 1-1**). Forested and undeveloped land bound the western section of the OCGS Site to the north and south. Route 9 extends north to south through the middle of the OCGS Site. The OCGS is situated on approximately 800 acres of land in the coastal pine barrens of New Jersey. The industrial complex of the OCGS is located west of Route 9 and consists of electrical transmission switching facilities, warehouse storage facilities, and outdoor storage areas, with undeveloped buffer areas. Construction of the OCGS took place from 1964 to 1969 and included dredging of a canal 60 feet beyond the mouth of Oyster Creek (JCP&L, 1972). A manmade intake channel is located north of the OCGS and a manmade discharge channel to the south that connects to Oyster Creek and Forked River to the north. The surrounding terrain is naturally flat with a mix of vacant lands, agricultural lands, and woodlands.

The property at OCGS has multiple private landowners including Holtec (formerly Exelon), Jersey Central Power & Light Company, and Forked River II, LLC. - The Holtec property extends from Barnegat Bay west past Route 9 (Block 100, Lot 1.05; Block 63, Lot 7; Block 41, Lot 43; Block 1001, Lot 4.02). Jersey Central Power & Light Company is the owner of a large parcel west of the Holtec property that extends to the Garden State parkway (Block 1001, Lot 4.06), and Forked River II, LLC owns a parcel located on the southeastern portion of the JCP&L property (Block 1001, Lot 4.05). A wetland delineation was previously completed during August 2016 by AKRF on the Forked River II, LLC property and NJDEP issued a Letter of Interpretation (LOI) on August 15, 2017 (LOI File #1512-17-0013.1) (Attachment C). The LOI will expire on August 15, 2022. The western portion of the Wetland Review Area also includes a parcel owned by the Township of Lacey (Block



1000, Lot 1) located on the western edge of U.S. 9 from its intersection with Beach Boulevard south to the southerly edge of Oyster Creek. Also included is a bike path located south of the Holtec property on the western side of Route 9 owned by Ocean Township (Block 61.01, Lot 1).

In addition to the interconnection points at Oyster Creek and BL England, Ocean Wind wanted to assess where the onshore duct bank installation impacts are going to impact wetlands from the export cable landfall and onshore export cable installation on the west side of Island Beach State Park (IBSP) as part of the OC WRA. An area located near Ocean Swimming Parking Area #2 was selected as a proposed location. To support the evaluation of this site, a wetland/watercourse delineation and ecological community assessment was completed within the IBSP portion of the OC WRA The IBSP WRA is an area west of Shore Road near a state-owned maintenance yard located in Island Beach State Park, Berkeley Township, NJ. A sandy maintenance road divides the IBSP WRA area horizontally along with the state-owned maintenance yard. The total area assessed was 2.7 acres.

The IBSP portion of the OC WRA is located within a portion of Block 1750, Lot 1, owned by the State of New Jersey (**Figure 1-1**). This area is bound by Shore Road to the east, the Barnegat Bay to the west and mapped wetlands to the north and south.



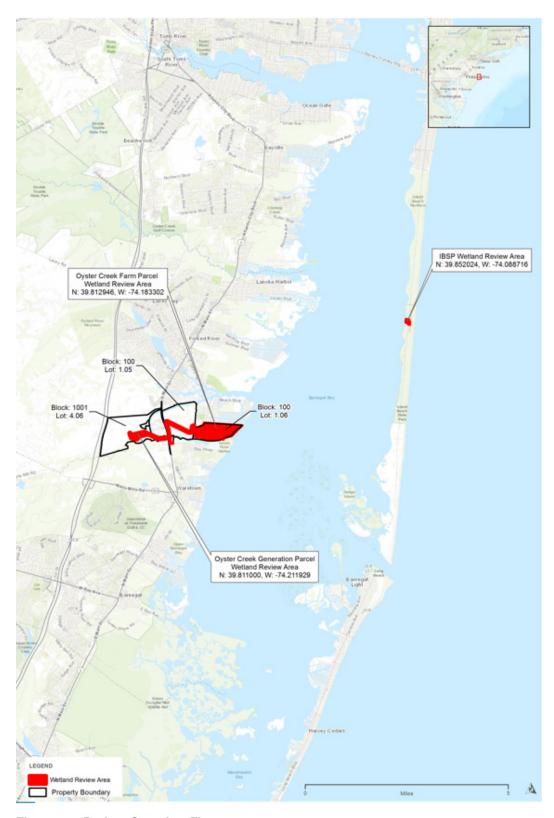


Figure 1-1. Project Overview Figure



2. Methods

HDR Engineering, Inc. (HDR) delineated the boundaries of wetlands and watercourses within the Project Area in two phases, Desktop Review and Field Survey, as described below.

2.1 Desktop Review

Prior to conducting the wetland and watercourse delineation, relevant materials were reviewed, and are included as attachments for reference:

- NJDEP Watershed Management Area Map
- New Jersey State Department of Environmental Protection (NJDEP) Wetlands Map
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Map
- U.S. Department of Agriculture (USDA) Natural Resources Conservation (NRCS) Web Soil Survey (WSS) Custom Soil Resource Report (Attachment A)
- Federal Emergency Management Agency (FEMA) 2013 Preliminary Working Data Flood Insurance Rate Maps (FIRM)

2.2 Field Survey

June 26 through 29, 2019 the boundaries of proposed Oyster Creek export cable route on the Holtec Property was delineated. On May 5 and 7, 2020, August 10 and 11, 2020, and September 3, 2020, the boundaries of the wetlands and watercourses within the OCGS Site were delineated.

On June 2, 2021, the boundaries of the wetlands and watercourses within the OC WRA were delineated. On November 19 and 30, 2021 the boundaries and watercourses within the IBSP WRA were delineated.

All delineation flag locations were surveyed by a license New Jersey Land Surveyor and additionally recorded using sub-meter accuracy GPS units.

All delineations used the three-parameter methodology described in the 1987 United States Army Corps of Engineers (USACE) wetland delineation manual (Environmental Laboratory 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual, Atlantic and Gulf Coastal Plain Region (USACE 2010). The lines were walked and verified based on the three-parameter approach (soils, vegetation, and hydrology) described in the 1989 Federal Interagency Manual. Upland and wetland observation points were recorded for each delineated wetland. Watercourses were delineated using the indicators of the ordinary high-water mark as described in Regulatory Guidance Letter 05-05 (USACE 2005). Mapped wetland observation locations were then verified by a New Jersey licensed professional land surveyor. Wetland delineation data sheets are included in **Attachment C**. Photographs of the site, wetland observation soil pits, and vegetation were taken and are included in **Attachment D**.

3. Results

3.1 Desktop Review

3.1.1 OC WRA

3.1.1.1 Proposed Export Cable Route - Lacey and Ocean Township

The OC WRA is within the NJDEP Barnegat Bay Watershed Management Area (WMA-13) **Figure 3.1-1**). The Barnegat Bay Watershed covers over 600 square miles and its characteristics vary from coastal dunes and



marshes to developed lands. An array of environmentally sensitive habitats exists here, such as sand beaches, bay islands, submerged aquatic vegetation, finfish nursery areas, shellfish beds, and waterfowl nesting grounds.

Oyster Creek discharge channel abuts the proposed ECR review area to the south. According to the NJDEP's Surface Quality Standards (N.J.A.C. 7:9B, adopted amendments N.J.A.C. 7:9B-1.15), Oyster Creek is classified as FW2-NT/SE1 waters. Designated uses for this classification include maintenance, migration and propagation of the natural and established biota, primary contact recreation, industrial and agricultural water supply, public potable water supply after conventional filtration treatment, migration of diadromous fish, and secondary contact recreation.

The western portion of the proposed ECR review area (Block 1001, Lot 4.02) has deciduous scrub/shrub wetlands and coniferous scrub/shrub wetlands mapped based on the NJDEP Wetlands Land Use/Land Cover Map (**Figure 3.1-2**). The NJDEP map shows wetlands within the WRA east of Route 9 (Block 100, Lot 1.05) as mixed scrub/shrub coniferous dominated wetlands.

The USFWS NWI map classifies wetlands within the proposed ECR review area on the western side of Route 9 as palustrine emergent wetlands (Cowardin classification PEM1E and PEM1C). The USFWS NWI map classifies wetlands within the OC WRA on the eastern side of Route 9 as estuarine and marine wetland (E2FO1P, E2EM1N, E2EM1P, E1UBL), and palustrine forested/shrub wetlands (PFO1B, PSS1B) (**Figure 3.1-3**).

The USDA WSS report indicates the majority of soil map units within the 1,112.2 ECR review area are classified as Lakehurst sand, Psamments, Manahawkin muck, and Psammaquents (**Attachment A**). Lesser amounts of mapped soils include Appoquinimink-Transquaking Mispillion complex and Herring Creek mucky silt loam. Lakehurst sand soils are non-hydric, moderately well drained and found on flats and dunes. Psamments are non-hydric soils, typically sandy human-transported material found on flats, with a typical soil profile consisting of coarse sand, gravelly coarse sand, and sand. Manahawkin muck soils are frequently flooded, hydric, and found in swamps and floodplains. These soils are typical of freshwater channels adjacent to tide water. Psammaquents are frequently flooded, hydric, very poorly drained, and found on flat landforms. The acreage, percent composition, soil series, and hydric rating for soil map units are presented in **Table 3.1.2-1**. A U.S. Department of Agriculture Custom Soil Resource Report is provided in **Attachment A**.

FEMA floodplain maps (FEMA 2015 Preliminary Work Map Data) showed that most of the proposed ECR review area is within Special Flood Hazard Area Zone X (Area of minimal flood hazard). The areas of the proposed ECR review area near Oyster Creek are designated Flood Zone AE (1% annual chance of flood). There are also areas of 0.2 percent annual chance flood hazard within the WRA. **Figure 3.1-4** illustrates the extents of the FEMA PFIRM flood hazard zones. **Table 3.1.2-2** summarizes the extents of each flood hazard zone within the proposed ECR review area.

Table 3.1.2-1. Soil Map Units within the Wetland Review Areas

Map Unit Symbol	Map Unit Name	Percent of Site	Soil Series Component	% Component	Hydric Rating
Appoquinimink- Transquaking-Mispillion complex, 0 to 1 percent slopes, very frequently flooded	0.1%	Appoquinimink	40	Yes	
		Transquaking	30	Yes	
	slopes, very frequently	0.176	Mispillion	25	Yes
	flooded		Minor Components	5	No
LakB		46.3%	Lakehurst and similar soils	85	No



Map Unit Symbol	Map Unit Name	Percent of Site	Soil Series Component	% Component	Hydric Rating
	Lakehurst sand, 0 to 5 percent slopes		Minor components	15	Yes/No
MakAt	Manahawkin muck, 0 to 2 percent slopes,	14.9%	Manahawkin, frequently flooded, and similar soils	85	Yes
	frequently flooded		Minor components	15	Yes
PCCA	Psamments, 0 to 2	24.2%	Psamments, nearly level, and similar soils	85	No
. 557 1	percent slopes	/ \$	Minor components	15	
PstAt	PstAt Psamments, 0 to 2 percent slopes		Psammaquents, sulfidic substratum, frequently flooded, and similar soils	85	Yes
	porconit cropco		Minor components	15	Yes
9	Herring Creek mucky silt loam, 0 to 1 meter water	0.8%	Herring creek, 0 to 1 meter water depth, and similar soils	85	Yes
	depth		Minor components	15	Yes
	Totals for Site	100.0%			

Table 3.1.2-2. Summary of FEMA Flood Hazard Zones within the Wetland Review Areas

Map Unit Symbol	Percent of Wetland Review Area
Zone AE (1.0%)	43.4%
Zone X (0.2%)	2.9%
Zone X (minimal flood risk)	53.7%
Totals for Site	100.0%

3.1.1.2 Proposed Onshore Substation at Oyster Creek Generating Station

The proposed onshore substation at the OCGS Site is within the NJDEP Barnegat Bay Watershed Management Area (WMA-13) (**Figure 3.1-5**). According to the NJDEP's Surface Quality Standards (N.J.A.C. 7:9B, adopted amendments N.J.A.C. 7:9B-1.15), Oyster Creek is classified as FW2-NT/SE1 waters. Designated uses for this classification include maintenance, migration and propagation of the natural and established biota, primary contact recreation, industrial and agricultural water supply, public potable water supply after conventional filtration treatment, migration of diadromous fish, and secondary contact recreation.

Block 1001, Lot 4.05 of the OCGS Site does not have mapped wetlands based on the NJDEP Wetlands Land Use/Land Cover Map (Figure 3.1-6). The NJDEP map shows wetlands within the OCGS Site Wetland Review Area east of Route 9 as mixed scrub/shrub coniferous dominated wetlands, Atlantic white cedar wetlands, and mixed scrub/shrub coniferous dominated wetlands. NJDEP mapped wetlands at the western portion of the Wetland Review Area of the OCGS Site are predominately deciduous scrub/shrub wetlands, coniferous scrub/shrub wetlands, mixed wooded coniferous dominated wetlands, mixed wooded deciduous dominated wetlands, and Atlantic White Cedar wetlands.

The USFWS NWI Map classifies wetlands within the OCGS Site Wetland Review Area on the eastern side of Route 9 as estuarine and marine wetlands (Cowardin classification E2EM1N, E2EM1P, E2FO1P, E2FO4P, and E2EM1Pd), freshwater forested/shrub wetlands (PFO4Cg), freshwater emergent wetlands (PEM1E), and



estuarine and marine wetlands (E2FO1P). The USFWS NWI map classifies wetlands on the western side of Route 9 on the OCGS Site as freshwater forested/shrub wetlands (PSS1Eh, PFO4C, PSS1/4Eg, PFO4/1C) and freshwater pond (PUBHh), with one area of freshwater emergent wetlands (PEM1Fh) (**Figure 3.1-7**).

The USDA WSS report indicates the majority of soil map units within the 1,194.4 acre OCGS Site is classified as Lakehurst sand, Psammaquents, Manahawkin muck, and Atsion sand (**Attachment A**). Lesser amounts of mapped soils include Appoquinimink-Transquaking-Mispillion complex, Berryland sand, Downer loamy sand, Lakewood san, Psamments, Herring Creek mucky silty loam, and Trappe sand. Lakehurst sand soils are non-hydric, moderately well drained and found on flats and dunes. Psammaquents are frequently flooded, hydric, very poorly drained, and found on flat landforms. Manahawkin muck soils are frequently flooded and found in swamps and floodplains. These soils are typical of freshwater channels adjacent to tide water. Atsion sand is poorly drained sandy marine sediments. Atsion sands are typically found in second growth woodland. A typical soil profile contains slightly decomposed plant material within the first two inches and sand for the remaining depths. The acreage, percent composition, soil series, and hydric rating for soil map units are presented in **Table 3.1.2-3** and **Table 3.1.2-4**. A U.S. Department of Agriculture Custom Soil Resource Report is provided in **Attachment A**.

FEMA floodplain maps (FEMA 2015 Preliminary Work Map Data) showed that most of the OCGS Site is within Special Flood Hazard Area Zone X (Area of minimal flood hazard). The areas of the OCGS Site near Oyster Creek are designated Flood Zone AE (1% annual chance of flood). There are also areas of 0.2 percent annual chance flood hazard within the Wetland Review Area. **Figure 3.1-8** illustrates the extents of the FEMA PFIRM flood hazard zones.

Table 3.1.2-3. Soil Map Units within the OCGS Site

Map Unit Symbol	Map Unit Name	Percent of Site	Soil Series Component	% Component	Hydric Rating
	Appoquinimink-		Appoquinimink	40	Yes
A mt A v	Transquaking-	0.6%	Transquaking	30	Yes
AptAv	Mispillion complex, 0 to 1 percent slopes,	0.0%	Mispillion	25	Yes
	very frequently flooded		Minor Components	5	No
AtsAO	Atsion sand, 0 to 2 percent slopes,	9.9%	Atsion and similar soils	90	Yes
Area	Northern Tidewater Area		Minor Components	10	No
	Downer loamy sand, 0 to 5 percent slopes, Northern Tidewater Area	0.9%	Downer and similar soils	80	No
DocBO			Minor components	20	Yes/No
LakB	Lakehurst sand, 0 to 5	45.0%	Lakehurst and similar soils	85	No
Land	percent slopes	43.0 /6	Minor components	15	Yes/No
LasB	Lakewood sand, 0 to 5	3.2%	Lakewood and similar soils	85	No
	percent slopes		Minor components	15	Yes/No
MakAt	Manahawkin muck, 0 to 2 percent slopes,	13.9%	Manahawkin, frequently flooded, and similar soils	85	Yes
	frequently flooded		Minor components	15	Yes
PssA	Psamments, 0 to 2 percent slopes	3.0%	Psamments, nearly level, and similar soils	85	No



Map Unit Symbol	Map Unit Name	Percent of Site	Soil Series Component	% Component	Hydric Rating
			Minor components	15	Yes
PstAt	Psamments, 0 to 2 percent slopes	15.5%	Psammaquents, sulfidic substratum, frequently flooded, and similar soils	85	Yes
			Minor components	15	Yes
WHe1	Herring Creek mucky silt loam, 0 to 1 meter	6.4%	Herring creek, 0 to 1 meter water depth, and similar soils	85	Yes
	water depth		Minor components 15	15	Yes
	Totals for Site	100.0%			

Table 3.1.2-4. Summary of FEMA Flood Hazard Zones within the OCGS Site

Map Unit Symbol	Percent of OCGS Site
Zone AE (1.0%)	19.6%
Zone A (1.0%)	4.7%
Zone VE (1.0%)	0%
Zone X (0.2%)	4.1%
Zone X (minimal flood risk)	71.6%
Totals for Site	100.0%





Figure 3.1.2-1. NJDEP Watershed Management Areas Map.





Figure 3.1.2-2. NJDEP Wetlands Map- OC WRA



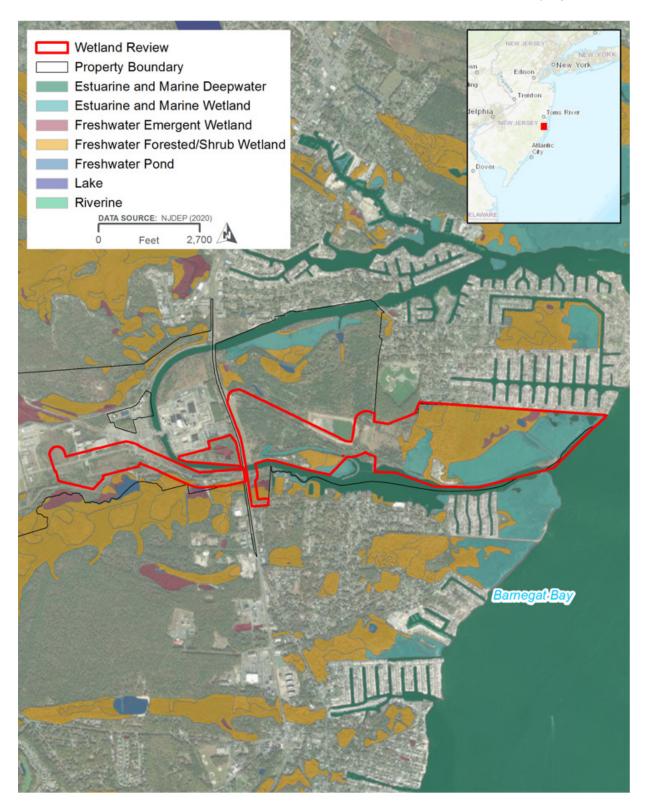


Figure 3.1.2-3. NWI Wetlands Map- OC WRA



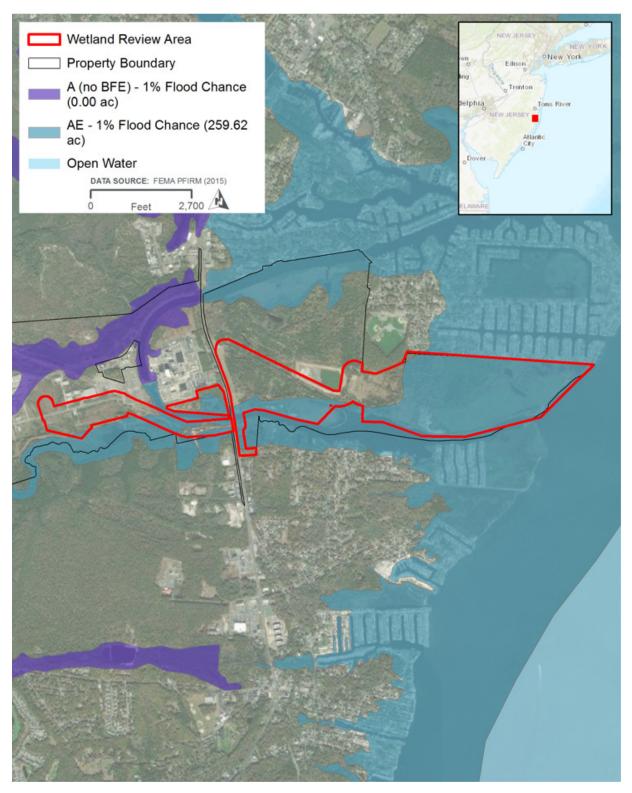


Figure 3.1.2-4. FEMA PFIRM Flood Hazard Area Map- OC WRA



3.1.1.3 Proposed Export Cable Route - Island Beach State Park

The IBSP Export Cable Route (ECR) Review Area is within the NJDEP Barnegat Bay Watershed Management Area (WMA-13) (**Figure 3.1-9**). The Barnegat Bay abuts the IBSP WRA to the west. According to the NJDEP's Surface Quality Standards (N.J.A.C. 7:9B, adopted amendments N.J.A.C. 7:9B-1.15), Barnegat Bay is classified as SE1C1 waters. Designated uses for this classification include shellfish harvesting, maintenance, migration and propagation of the natural and established biota, primary contact recreation and any other reasonable use.

IBSP WRA has deciduous scrub/shrub wetlands, mixed scrub/shrub wetlands (deciduous dominate), and phragmites dominate interior wetlands mapped based on the NJDEP Wetlands Land Use/Land Cover Map (**Figure 3.1-10**).

The USFWS NWI map classifies wetlands within the IBSP WRA north and south of the access road as freshwater forested/shrub (Cowardin classification PSS13B). The wetlands west of the maintenance yard are classified as estuarine and marine (Cowardin classification E2EM1PD). (**Figure 3.1-11**).

The USDA WSS report indicates the majority of soil map units within the 2.2-acre IBSP WRA are classified as Hooksan fine sand (**Attachment A**). Lesser amounts of mapped soils include Mantoloking sand. Hooksan fine sand are non-hydric, excessively drained and found on dunes on barrier islands. Mantoloking sand are frequently flooded, hydric, subaqueous drainage and found on flood-tidal delta flats. The acreage, percent composition, soil series, and hydric rating for soil map units are presented in **Table 3.1.2-5**. A U.S. Department of Agriculture Custom Soil Resource Report is provided in **Attachment A**.

FEMA floodplain maps (FEMA 2015 Preliminary Work Map Data) showed that the entire extent of the IBSP WRA is within Flood Hazard Zone AE (1% annual chance of flood). **Figure 3.1-12** illustrates the extents of the FEMA PFIRM flood hazard zones. **Table 3.1.2-6** summarizes the extents of each flood hazard zone within the IBSP WRA.

Table 3.1.2-5. Soil Map Units within the Wetland Review Areas

Map Unit Symbol	Map Unit Name	Percent of Site	Soil Series Component	% Component	Hydric Rating
	Hooksan fine sand, 2 to		Hooksan and similar soils	85	No
110	10 percent slopes	99.3%	Transquaking	5	Yes
HorsC	very frequently		Appoquicinimink	5	Yes
	flooded		Atsion	5	Yes
	Mantoloking sand, 0 to 1		Mantoloking Sand	85	Yes
WMa1	meter water depth, flat	0.7%	Cottman	10	Yes
			Demas	5	Yes
	Totals for Site	100.0%			

Table 3.1.2-6. Summary of FEMA Flood Hazard Zones within the Wetland Review Areas

Map Unit Symbol	Percent of Wetland Review Area
Zone AE (1.0%)	100%
Totals	for Site 100.0%





Figure 3.1.2-9. WMA Map- IBSP



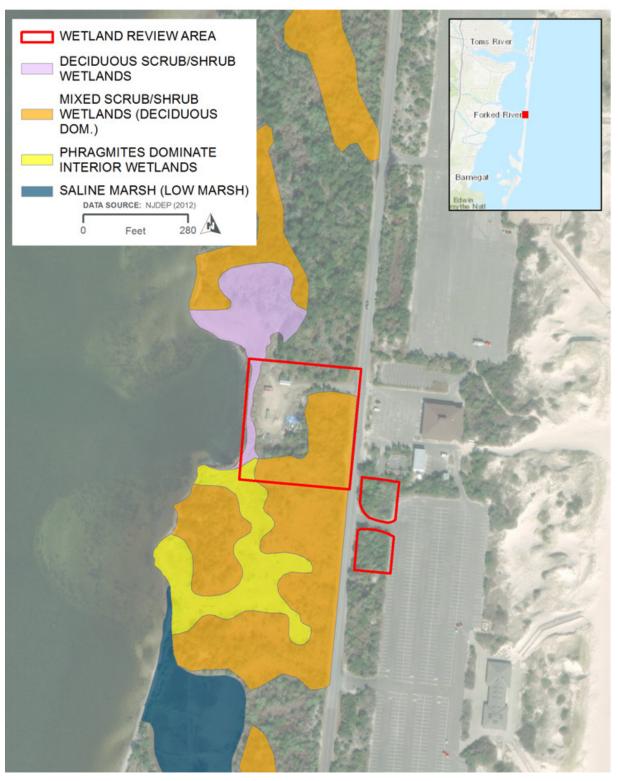


Figure 3.1.2-10. NJDEP Wetlands Map- IBSP



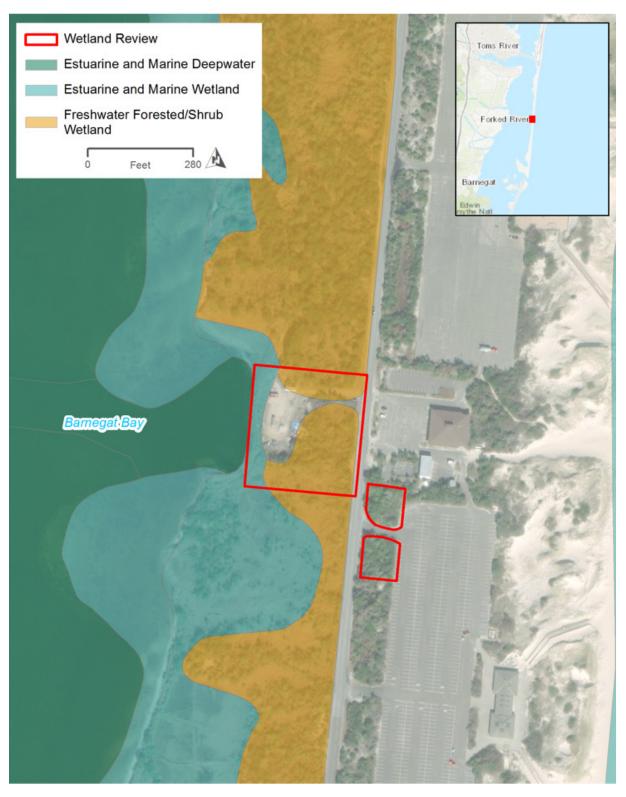


Figure 3.1.2-11. NWI Wetlands Map- IBSP



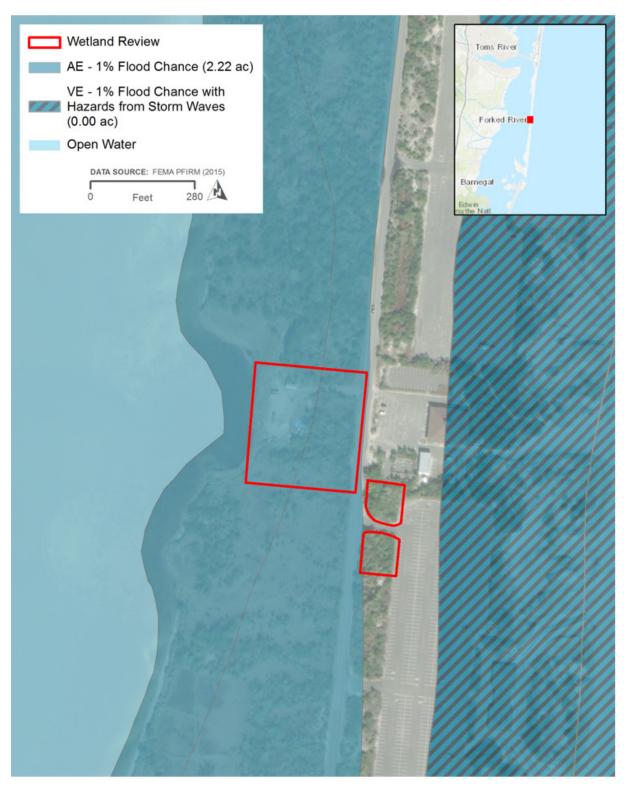


Figure 3.1.2-12. FEMA PFIRM Flood Hazard Area Map- IBSP



3.2 Wetland Delineation Field Survey

3.2.1 OC WRA

3.2.1.1 Proposed Export Cable Route- Lacey and Ocean Townships

Four palustrine forested and emergent wetlands were delineated within the WRA, comprising an area of 14.9 acres. The delineated wetlands and observation points are shown on **Figure 3.2.1-1.** During the site walk-over on November 3, 2021 with NJDEP, wetlands B, F, E, H2, and N were enlarged by NJDEP as described below citing the continuation of hydrophytic vegetation and hydric soils beyond the originally delineated boundary increasing the total wetland area. Additionally, NJDEP identified Wetlands H, G2, and I, bringing the total delineated wetland are up to 225.75 acres. Wetland delineation data sheets for upland and wetland observation points are included in **Attachment E**. These wetlands are described in detail below.

Wetland A – The area delineated as Wetland A is an 86.37 -acre and is an estuarine intertidal emergent wetland dominated by *Phragmites australis* based on Cowardin et al. (1979). Wetland A is located on the seaward side of the berm that separates the saltmarshes from freshwater wetlands on the Site. It is bounded to the north by Orlando Drive, to the east by Barnegat Bay, to the south by Oyster Creek, and to the west by the berm described above. The northwestern portion of Wetland A is identified as "PF01Bd" (Palustrine Forested, Broad-Leaved Deciduous Vegetation, Seasonally Saturated, Partially Drained/Ditched)) by NWI. Common reed (*Phragmites australis*) has a Facultative Wetland (FACW) indicator status providing a hydrophytic vegetation indicator (Attachment B). Soils in Wetland A were indicative of hydric soils due to the presence of sandy mucky mineral material (Indicator S1). Hydrology indicators include a high water table (3 inches below surface), saturation at the surface, water marks, and water-stained leaves. A summary of wetland indicators is provided in **Table 3.2.1-1**.

An upland observation point was taken outside of Wetland A and no hydric soil indicators were observed. Dominant species within the upland area included winged sumac (*Rhus copallinum*), beach rose (*Rosa rugosa*), Japanese honeysuckle (*Lonicera japonica*), poison ivy (*Toxicodendron radicans*) (Attachment B). Winged sumac has an Upland (UPL) indicator status, and beach rose, Japanese honeysuckle, and Virginia creeper (*Parthenocissus quinquefolia*) have a Facultative Upland (FACU) indicator status. Poison ivy has a Facultative (FAC) indicator status. These dominant species are all indicative of upland vegetation based on the dominance test.

Wetland B/C Complex – The Wetland B/C Complex abuts the manmade ditches that run north to south connected by two ditches that run east to west. The dirt trail that runs through the property bisects this wetland complex. It is bounded to the north by a the property boundary and residential area (Orlando Drive). Wetland B lies north of the dirt trail and Wetland C lies to the south. This area was originally delineated to not include the extensive areas between the ditches that run north to south. Upon site verification with a NJDEP representative, they pointed out the wetlands extend between ditches siting the presence of hydrophytic vegetation and hydric soils. Wetland B is 18.19 acres and Wetland C is 27.42 acres. Both are palustrine forested broad-leaved deciduous seasonally saturated wetland based on Cowardin et al. (1979). They are dominated by red maple (*Acer rubrum*), sensitive fern (*Onoclea sensibilis*), and highbush blueberry (*Vaccinium corymbosum*). Sensitive fern and highbush blueberry have Facultative Wetland (FACW) indicator statuses, while red maple has a FAC indicator status providing a hydrophytic vegetation indicator. Soils in the both wetlands were indicative of hydric soils due to the presence of hydrogen sulfide odors (Indicator A4) and sandy mucky mineral material (Indicator S1). Hydrology indicators include a high water table (6 inches), saturation at the surface, water marks, drift, deposits, and water-stained leaves. This habitat type is identified as "PF01Bd" (Palustrine Forested, Broad-Leaved Deciduous Vegetation, Seasonally Saturated, Partially Drained/Ditched) by



NWI and is present north and south of the main berm. A summary of wetland indicators is provided in **Table 3.2.2-1**.

An upland observation point was taken outside of Wetlands B and C and no hydric soil indicators were observed. Dominant species within the upland area included red maple, highbush blueberry, and bitter panicum (*Panicum amarum*). Red maple has a FAC indicator status, indicating upland vegetation. Highbush blueberry has a FACW indicator status and bitter panicum has a FAC indicator status. Based on the dominance test, hydrophytic vegetation is present; however, no wetland hydrology indicators or hydric soil indicators were present.

Wetland E – Wetland E is a 23.46-acre palustrine scrub/shrub wetland that receives surface runoff from Watercourses E and F based on Cowardin et al. (1979). Wetland E is identified as "E2EM1P" (Estuarine, Intertidal, Emergent/Persistent Vegetation, Irregularly Flooded) and "PEM1B" (Palustrine, Emergent, Persistent Vegetation, Seasonally Saturated) by NWI. This area was originally delineated further to the south and did not extend north to the dirt trail. However, upon site verification with a NJDEP representative, they pointed out the presence of hydrophytic vegetation and hydric soils. Wetland E is dominated by red maple, having a FAC indicator status, and common reed, having a FACW indicator status; providing a hydrophytic vegetation indicator (Dominance Test). Soils in Wetland E were indicative of hydric soils due to the presence of hydrogen sulfide (Indicator A4) and stratified layers (Indicator A5). Hydrology indicators include the presence of surface water, a high water table, saturation, and hydrogen sulfide odor. A summary of wetland indicators is provided in **Table**

An upland observation point was taken outside of Wetland E and no hydric soil indicators were observed. Dominant species within the upland area include Eastern red cedar (*Juniperus virginiana*), black tupelo (*Nyssa sylvatica*), highbush blueberry, and iron oak (*Quercus stellata*). Eastern red cedar has a FACU indicator status and black tupelo has a FAC indicator status. Highbush blueberry has a FACW indicator status and iron oak has a UPL indicator status. Based on the dominance test, this area is an upland.

Wetland G2 – Wetland G-2 was identified during the NJDEP site visit as a depressional isolated palustrine forested wetland based on Cowardin et al. (1979). It is a 0.37-acre wetland dominated by red maple (*Acer rubrum*), and highbush blueberry (*Vaccinium corymbosum*). Highbush blueberry has a Facultative Wetland (FACW) indicator statuses, while red maple has a FAC indicator status providing a hydrophytic vegetation indicator. Soils in the wetland were indicative of hydric soils due to the presence of hydrogen sulfide odors (Indicator A4) and sandy mucky mineral material (Indicator S1). Hydrology indicators include a high water table (6 inches), saturation at the surface, water marks, drift, deposits, and water-stained leaves. This habitat type is identified as "PF01Bd" (Palustrine Forested, Broad-Leaved Deciduous Vegetation, Seasonally Saturated, Partially Drained/Ditched) by NWI and is present north of the dirt road bisecting Wetlands B and C.



Wetland ID	Hydrology Indicators	Dominant Vegetation	Hydric Soil Indicator	Size (Acres)	Cowardin Classification
Wetland A	High water table (A2), saturation (A3), water marks (B1), water-stained leaves (B9)	Phragmites australis (FACW)	Muck presence, sandy mucky mineral (S1)	86.37	E2EM5P
Wetland B & C	High water table (A2), saturation (A3), water marks (B1), water-stained leaves (B9)	Acer rubrum (FAC), Vaccinium corymbosum (FACW), Phragmites australis (FACW), Onoclea sensibilis (FACW)	Hydrogen sulfide, sandy mucky mineral (S1, A4)	45.61	PFO1Bd PEM1B
Wetland E	Surface water (A1), high water table (A2), saturation (A3), hydrogen sulfide odor (C1)	Acer rubrum (FAC), Phragmites australis (FACW)	Hydrogen sulfide, stratified layers (A4, A5)	23.46	E2EM5P PFO1Bd
Wetland G2	High water table (A2), saturation (A3), water marks (B1), water-stained leaves (B9)	Acer rubrum (FAC), Vaccinium corymbosum (FACW)	Hydrogen sulfide, sandy mucky mineral (S1, A4)	0.37	PFO1Bd
			Totals for Site	155.81	

Wetland K – The area delineated as Wetland K is a 0.13-acre palustrine emergent wetland based on Cowardin et al. (1979). Wetland K is located on the western side of Route 9 south of the OCGS parking lot paved parking and equipment laydown area. Wetland K is a stormwater detention/recharge basin; it is fed by two pipes entering on the northern side. This wetland is not mapped by NWI; based on the surrounding topography this area was upland prior to being excavated to create a stormwater basin. Dominant species observed within Wetland K include panic grass (*Panicum virgatum*) in the herb stratum, providing a hydrophytic vegetation indicator through the dominance test. Soils in Wetland K were indicative of hydric soils due to the presence of a depleted matrix (Indicator F3) and depleted soils below a dark surface (Indicator A3). Wetland hydrology indicators include water-stained leaves. The water table was observed at 18" and saturation was present at 12" below the ground surface. A summary of wetland hydrology, vegetation, and soil indicators is provided in **Table 3.2.2-2**.

An upland observation point was taken outside of Wetland K and no hydric soil indicators were observed. Dominant species within the upland area included pitch pine (*Pinus rigida*), bear oak (*Quercus ilicifolia*), sweet fern (*Comptonia peregrina*), and panic grass, which did not pass the hydrophytic vegetation indicator tests.

Wetland L – The area delineated as Wetland L is a 3.15 acre palustrine emergent, shrub/scrub, open water, and forested wetland based on Cowardin et al. (1979). Wetland L is located on the western side of Route 9 southeast of the OCGS and contains an exiting, flowing channel (Watercourse 2) that discharges into Oyster Creek. It is dominated by black tupelo (*Nyssa sylvatica*) and red maple (*Acer rubrum*) in the tree stratum, highbush blueberry (*Vaccinium corymbosum*) in the shrub stratum, and water shield (*Brasenia schreberi*) and common reed (*Phragmites australis*) in the herb stratum, providing a hydrophytic vegetation indicator through the dominance test and prevalence index. Soils in Wetland L were indicative of hydric soils due to the presence of a histosol (Indicator A1). Soils consisted of a deep saturated peat layer; plant roots were confined to the upper four inches of the soil profile. Hydrology indicators include a high-water table at the surface, saturation at the surface, surface water with a depth of one inch, water-stained leaves, and aquatic fauna. Morphological



plant adaptations consisted of trees and shrubs growing on hummocks, surface roots, and multiple trunks on the red maples. Wetland L is identified by NWI as "PEM1E" (Palustrine, emergent, persistent, seasonally flooded/saturated) and as "PEM1C" (Palustrine, emergent, persistent, seasonally flooded). Based on the field delineation, Wetland L also contains forested (PFO1E; palustrine forested, needle-leaved vegetation, persistent, seasonally flooded/saturated) wetlands, an open water (POW; palustrine open water) wetland 0.58 acre in size, and scrub/shrub (PSS1E; palustrine scrub/shrub, broad-leaved deciduous vegetation, seasonally flooded/saturated) components. A summary of wetland indicators is provided in **Table 3.2.2-2**.

Atlantic white cedars (*Chamaecyparis thyoides*) are present in the northerly portion of Wetland L and along a partially breached east-west berm that runs across the wetland. Most of the trees are 6 to 12 inches in diameter with some over 15 inches in diameter. Portions of the wetland feature a scrub/shrub association; the area south of the berm is a common reed-dominated herbaceous wetland with the shallow ponded area dominated by white water lily (*Nymphaea alba*). Killifish (*Fundulus diaphanus*) were observed in the ponded area. Sundew (*Drosera rotundifolia*) plants and swamp loosestrife (*Decodon verticillus*) were also observed in the herbaceous portion of the wetland. A culvert enters the northerly end of the wetland; no flow was discernable during the June 2, 2021 delineation survey. A flowing exiting stream course (Watercourse 2) from Wetland L was delineated to the point where it enters the Oyster Creek discharge channel upstream of the Route 9 bridge.

An upland observation point was taken outside of the Wetland L and no wetland hydrology indicators were observed. Dominant species within the upland area included pitch pine and black tupelo in the tree stratum and highbush blueberry in the shrub stratum, providing a hydrophytic vegetation indicator through the dominance test and prevalence index. The soils also met the wetland criterion for sandy redox (S5) however, the area is not a wetland based on the lack of wetland hydrology.

Wetland M – Wetland M is a 14.39 acre palustrine forested and emergent wetland based on Cowardin et al. (1979). Wetland M is located on the eastern side of Route 9 and abuts the delineated Oyster Creek Tributary (Watercourse 1). Wetland M is identified by NWI as "PFO1B" (Palustrine, forested, broad-leaved deciduous, seasonally saturated), "PSS1B" (Palustrine, scrub-shrub, broad-leaved deciduous, seasonally saturated), and "E2EM1P" (Estuarine, intertidal, emergent, persistent, irregularly flooded). No evidence of tidal influence was observed in the studied portions of Wetland M or along Watercourse 1. Wetland M is dominated by red maple and black tupelo in the tree stratum, highbush blueberry in the shrub stratum, and shallow sedge (*Carex lurida*) and spotted touch-me-not (*Impatiens capensis*) in the herb stratum, providing a hydrophytic vegetation indicator through the dominance test and prevalence index. Soils in Wetland M were indicative of hydric soils due to the presence of a histosol (Indicator A1). Hydrology indicators include the presence of a high-water table at a depth of three inches, saturation at the surface, water marks, and water-stained leaves. Morphological plant adaptations consisted of surface roots and multiple trunks on the red maples. A summary of wetland indicators is provided in **Table 3.2.2-2**.

An upland observation point was taken outside and to the north of Wetland M, and no hydric soil or wetland hydrology indicators were observed. Dominant species within the upland area include black oak, Eastern red cedar (*Juniperus virginiana*), black cherry (*Prunus serotina*), Northern bayberry (*Myrica pensylvanica*), common timothy (*Phleum pratense*), and American holly (*Ilex opaca*) which did not pass the hydrophytic vegetation indicator tests.

<u>Wetland N</u> – Wetland N is a 1.85-acre palustrine forested wetland based on Cowardin et al. (1979). Wetland N is located on the eastern side of Route 9 and west of the delineated Oyster Creek Tributary. Wetland N is partially mapped by NWI as "E2FO1P" (Estuarine, intertidal, forested, broad-leaved deciduous, irregularly flooded). However, this wetland was found to be characteristic of a palustrine forested wetland. Wetland N is dominated by black tupelo and red maple in the tree stratum, highbush blueberry in the shrub stratum, and



uptight sedge (*Carex stricta*) in the herb stratum, providing a hydrophytic vegetation indicator through the dominance test and prevalence index. Soils in Wetland N were indicative of hydric soils due to the presence of depleted soil below a dark surface (Indicator A11). Hydrology indicators include the presence of surface water at less than one inch depth, a high-water table at the surface, saturation at the surface, water-stained leaves, and aquatic fauna. A summary of wetland indicators is provided in **Table 3.2.2-2**.

An upland observation point was taken outside of the Wetland N and no hydric soils or hydrophytic vegetation were observed. Dominant species within the upland area included Eastern red cedar and red maple. This area is considered upland due to the lack of hydric soil indicators and hydrophytic vegetation.

Table 3.2.2-2. Summary of Wetland Delineation Field Survey Results

Wetland ID	Hydrology Indicators	Dominant Vegetation	Hydric Soil Indicator	Size (Acres) or Linear Feet (LF)	NWI Cowardin Classification	Field-Determined Cowardin Classification
Wetland K	Water-Stained Leaves	Panicum virgatum (FAC)	Depleted Matrix (F3), Depleted Below Dark Surface (A11)	0.13 acre	None	PEM
Wetland L	Surface water, high water table, saturation, water-stained leaves, aquatic fauna	Nyssa sylvatica (FAC), Acer rubrum (FAC), Vaccinium corymbosum (FACW), Brasenia schreberi (OBL), Phragmites australis (FACW)	Histosol (A1)	3.15 acre	PEM1E, PEM1C	PEM, PSS, PFO, POW
Wetland M	High water table, saturation, water marks, water- stained leaves	Acer rubrum (FAC), Nyssa sylvatica (FAC), Vaccinium corymbosum (FACW), Carex lurida (OBL), Impatiens capensis (FACW)	Histosol (A1)	14.39 acre	PFO1B, PSS1B, E2EM1P	PFO, PEM
Wetland N	Surface water, high water table, saturation, water-stained leaves, aquatic fauna	Nyssa sylvatica (FAC), Acer rubrum (FAC), Vaccinium corymbosum (FACW), Carex stricta (OBL)	Depleted Below Dark Surface (A11)	1.85acre	E2FO1P	PFO
		Т	14.86			

FACW= Facultative Wetland species

FAC = Facultative species

OBL = Obligate species

FACU = Facultative Upland species



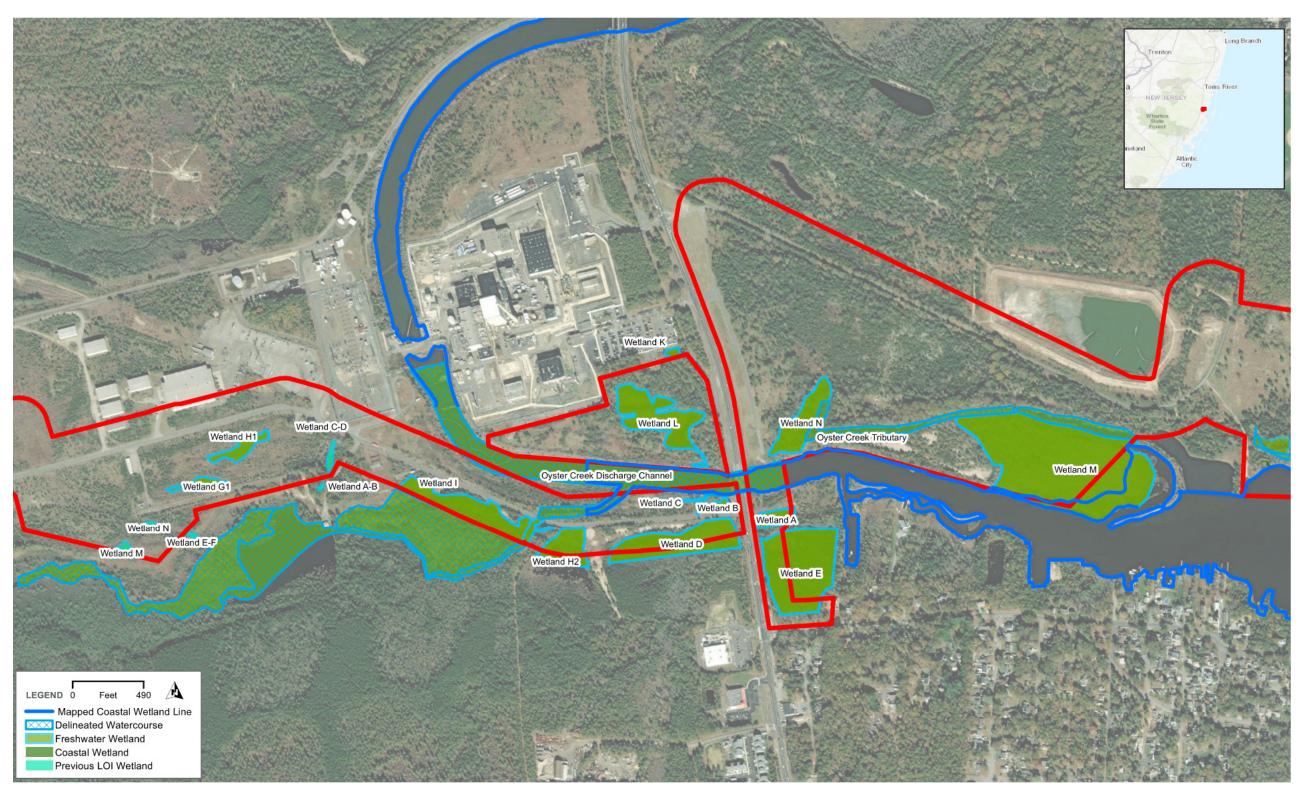


Figure 3.2.2-2. Field Survey Wetland Delineation Map – OC WRA





Figure 3.2.2-2. Field Survey Wetland Delineation Map – OC WRA



3.2.1.2 Proposed Onshore Substation at Oyster Creek Generating Station

Wetland A – The area delineated as Wetland A is a 0.60 acre palustrine forested and emergent wetland based on Cowardin et al. (1979). Wetland A is located on the eastern side of Route 9 south of the bridge that crosses Oyster Creek. It is bounded to the north by a wooded upland area abutting Oyster Creek, to the east by residential properties, to the south by fencing with vacant land, and to the west by the shoulder of Route 9. Wetland A is not mapped by NWI. Dominant species observed within Wetland A include Red maple (*Acer rubrum*) and Eastern red cedar (*Juniperus virginiana*) in the tree stratum, Northern bayberry (*Morella pensylvanica*) in the shrub stratum, and fall panic grass (*Panicum dichotomiflorum*) in the herb stratum, providing a hydrophytic vegetation indicator through the dominance test and prevalence index. (**Attachment E**). Soils in Wetland A were indicative of hydric soils due to the presence of a depleted matrix (Indicator F3). Hydrology indicators include surface water with a depth of one inch, a high water table at the soil surface, and saturation at the soil surface. A summary of wetland hydrology, vegetation, and soil indicators is provided in **Table 3.2.2-1**.

An upland observation point was taken outside of Wetland A and no hydric soil indicators were observed. Dominant species within the upland area included Eastern red cedar, Scotch pine (*Pinus sylvestris*), Northern bayberry, fall panic grass, and Virginia strawberry (*Fragaria virginiana*), which did not pass the hydrophytic vegetation indicator tests (**Attachment EC**).

<u>Wetland B</u> – The area delineated as Wetland B is a 0.20-acre palustrine emergent wetland based on Cowardin et al. (1979). Wetland B is located on the western side of Route 9 south of the bridge that crosses Oyster Creek and contains a flowing ditch that discharges into Oyster Creek. It is dominated by common reed (*Phragmites australis*), providing a hydrophytic vegetation indicator through the dominance test and prevalence index. Soils in Wetland B were indicative of hydric soils due to the presence of a hydrogen sulfide (Indicator A4). Hydrology indicators include a high water table at the surface, saturation at the surface, and surface water with a depth of 2 inches. This habitat type is not mapped by NWI. A summary of wetland indicators is provided in **Table 3.2.2-1**.

An upland observation point was taken outside of the Wetland B and no hydric soil or wetland hydrology indicators were observed. Dominant species within the upland area included choke cherry (*Prunus virginiana*), red pine (*Pinus resinosa*), Scotch pine, Eastern red cedar, Eastern arborvitae, red maple, and Asian bittersweet (*Celastrus orbiculatus*), which did not pass the hydrophytic vegetation indicator tests.

Wetland C – Wetland C is a 0.20-acre palustrine forested and emergent wetland based on Cowardin et al. (1979). Wetland C is located on the western side of Route 9 and west of Wetland B. A ditch flows through the wetland and discharges into Oyster Creek and the western portion contains a wet meadow exhibiting surface inundation. Wetland C is not identified by NWI. Wetland C is dominated by red maple, coastal sweet-pepperbush (*Clethra alnifolia*), common reed, and sensitive fern (*Onoclea sensibilis*), providing a hydrophytic vegetation indicator through the dominance test and prevalence index. Soils in Wetland C were indicative of hydric soils due to the presence of a depleted matrix (Indicator F3). Hydrology indicators include the presence of a high water table at the surface and saturation at the surface. A summary of wetland indicators is provided in **Table 3.2.2-1**.

An upland observation point was taken outside of Wetland C and no hydric soil or wetland hydrology indicators were observed. Dominant species within the upland area include Eastern red cedar, black cherry (*Prunus serotina*), highbush blueberry (*Vaccinium corymbosum*), winged sumac (*Rhus copallinum*), Northern bayberry, carpetweed (*Mollugo verticillata*), cinnamon fern (*Osmundastrum cinnamomeum*), and red raspberry (*Rubus idaeus*) which did not pass the hydrophytic vegetation indicator tests.



Wetland D – Wetland D is a 3.44-acre palustrine emergent wetland based on Cowardin et al. (1979). Wetland D is located on the western side of Route 9, south of Discharge Drive. Wetland D is identified by NWI as "PSS1Eh" (Palustrine, Scrub/Shrub, Broad-Leaved Deciduous, Seasonally Flooded/Saturated, Nontidal, Diked/Impounded). However, because Wetland D consists of a monoculture of common reed, the field-determined Coward class is PEM and not consistent with PSS1Eh as determined by NWI. Wetland D is dominated by common reed, providing a hydrophytic vegetation indicator through the dominance test and prevalence index. Soils in Wetland D were indicative of hydric soils due to the presence of dark surface (Indicator S7). Hydrology indicators include surface water, a high water table and saturation. A summary of wetland indicators is provided in **Table 3.2.2-1**.

An upland observation point was taken outside of the Wetland D and no hydric soil or wetland hydrology indicators were observed. Dominant species within the upland area included Eastern red cedar, northern bayberry, common reed, and red raspberry. These dominant species are all indicative of wetland vegetation based on the dominance test; however, the prevalence index for these species was less than or equal to 3. This area is still considered upland due to the lack of hydric soil indicators, a restrictive layer at 10 inches, and lack of wetland hydrology.

<u>Wetland E</u> – Wetland E is a 5.66-acre palustrine forested needle-leaved evergreen wetland based on Cowardin et al. (1979). Wetland E is located on the eastern side of Route 9 and south of Wetland A. Wetland E is identified as "PFO4Cg" (Palustrine, Forested, Needle-Leaved Evergreen, Seasonally Flood, Organic Soils) by NWI. Wetland E is dominated by Atlantic white cedar (*Chamaecyparis thyoides*), coastal sweet-pepperbush, southern arrow-wood (*Viburnum dentatum*), highbush blueberry, cinnamon fern, and Eastern poison ivy (*Toxicodendron radicans*), providing a hydrophytic vegetation indicator through the dominance test and prevalence index. Soils in Wetland E were indicative of hydric soils due to the presence of histosol (Indicator A1). Hydrology indicators include the presence of a high water table at the surface, saturation at the surface, and water-stained leaves. A summary of wetland indicators is provided in **Table 3.2.2-1**.

An upland observation point was taken outside of Wetland E and no hydric soil or wetland hydrology indicators were observed. Dominant species within the upland area include pin oak (*Quercus palustris*), choke cherry, sassafras (*Sassafras albidum*), red pine, coastal sweet-pepperbush, Eastern red cedar, Virginia strawberry, annual wormwood (*Artemisia annua*), and Asian bittersweet, which did not pass the hydrophytic vegetation indicator tests.

Wetland G – Wetland G is a 0.49-acre palustrine emergent wetland based on Cowardin et al. (1979). Wetland G is located on the middle portion of the Forked River parcel south of Discharge Road. This wetland appears to be isolated and no defined outlet was found. Wetland G is not identified by NWI. Wetland G is dominated by Eastern red cedar, black cherry, common reed, and fall panic grass, providing a hydrophytic vegetation indicator through the dominance test and prevalence index. Soils in Wetland G were indicative of hydric soils due to the presence of a depleted matrix (Indicator F3). Hydrology indicators include a high water table at a depth of 3 inches, saturation to the surface, and water stained leaves. A summary of wetland indicators is provided in **Table 3.2.2-1.**

An upland observation point was taken outside of the Wetland G and no hydric soil or wetland hydrology indicators were observed. Dominant species within the upland area included Eastern red cedar, black cherry, red raspberry, and fall panic grass. These dominant species are all indicative of wetland vegetation based on the dominance test; however, the prevalence index is less than or equal to three. This area is still considered an upland due to the lack of hydric soil indicators and wetland hydrology.



Wetland H1 (within generation site) - Wetland H1 is a 0.73-acre freshwater shrub wetland based on Cowardin et al. (1979). Wetland H is located on the southwestern edge of the Block 41, Lot 43 parcel. Wetland H is identified as "PEM1Fh" (Palustrine, Emergent, Persistent, Semi-permanently Flooded, Diked/Impounded) by NWI. However, this wetland is a PSS wetland based the field-determined Cowardin class and is not consistent with PEM1Fh as determined by NWI. Wetland H1 is dominated by red maple, coastal sweet-pepperbush, and Eastern red cedar, providing a hydrophytic vegetation indicator through the dominance test and prevalence index. Soils in Wetland H were indicative of hydric soils due to the presence of dark surface (Indicator S7). Hydrology indicators include saturation and sediment deposits. A summary of wetland indicators is provided in **Table 3.2.2-1**.

An upland observation point was taken outside of Wetland H and no hydric soil or wetland hydrology indicators were observed. Dominant species within the upland area include Eastern red cedar, pitch pine, red maple, arrowwood, common reed, and red raspberry. Hydrophytic vegetation is present based on the prevalence index; however, this area is not a wetland due to lack of hydric soils and wetland hydrology.

Wetland H2 (along access road) — Wetland H2 is a 1.36-acre palustrine emergent wetland based on Cowardin et al. (1979). Wetland H2 was originally 0.68 acres and was enlarged to 1.36 acres based on NJDEP walk through. It is located on the western side of Route 9, south of Discharge Drive. Wetland H2 is identified by NWI as "PSS1Eh" (Palustrine, Scrub/Shrub, Broad-Leaved Deciduous, Seasonally Flooded/Saturated, Nontidal, Diked/Impounded). Wetland H2 is dominated by Atlantic white cedar, providing a hydrophytic vegetation indicator through the dominance test and prevalence index. Soils in Wetland H2 were indicative of hydric soils due to the presence of dark surface (Indicator S7). Hydrology indicators include surface water, a high water table and saturation. A summary of wetland indicators is provided in **Table 3.2.2-2**.

Wetland I - Wetland I consists of 2.8 acres continuing an additional 14.8 acres outside the Project review area. Additionally, there is a 6.7 acre "fire pond"/stream area that the wetlands drain into. This area was not originally delineated by HDR wetland scientists and was identified by the NJDEP representative during site visit in November of 2021. The NJDEP representative noted dominant vegetation such as Atlantic white cedar, red maple, and sweet pepperbush, and tussock sedge (*Carex stricta*) along with hydric soil indicators such as dark surface (S7).

Wetland L — Wetland L is a 14.4-acre freshwater forested/shrub wetland based on Cowardin et al. (1979). Wetland L is located on the western side of Route 9, south of Discharge Drive along an unnamed tributary to Oyster Creek's tributary that runs east along the north side of Discharge Drive. Wetland L is identified by NWI as "PFO4/1C" (Palustrine, Forested, Needle-Leaved Evergreen, Broad-Leaved Deciduous, Seasonally Flooded). Wetland L is dominated by Atlantic white cedar, providing a hydrophytic vegetation indicator through the dominance test and prevalence index. Soils in Wetland H2 were indicative of hydric soils due to the presence of dark surface (Indicator S7). Hydrology indicators include surface water, a high water table and saturation. A summary of wetland indicators is provided in **Table 3.2.2-2**.

Table 3.2.2-2. Summary of Wetland Delineation Field Survey Results



Wetland ID	Hydrology Indicators	Dominant Vegetation	Hydric Soil Indicator	Size (Acres) or Linear Feet (LF)	NWI Cowardin Classification	Field- Determined Cowardin Classification
Wetland A	Surface water, high water table, saturation	Acer rubrum (FAC),Juniperus virginiana (FACU), Morella pensylvanica (FAC), Panicum dichotomiflorum (FACW)	Depleted Matrix (F3)	0.60 acre	None	PFO/PEM
Wetland B	Surface water, high water table, saturation	Phragmites australis (FACW)	Hydrogen Sulfide (A4)	0.20 acre	None	PEM
Wetland C	High water table, saturation	Acer rubrum (FAC), Clethra alnifolia (FACW), Phragmites australis (FACW), Onoclea sensibilis (FACW)	Depleted Matrix (F3)	0.20 acre	None	PEM
Wetland D	Surface water, high water table, saturation	Phragmites australis (FACW)	Dark Surface (S7)	3.44 acre	PSS1Eh	PEM
Wetland E	High water table, saturation, water-stained leaves	Chamaecyparis thyoides (OBL),Clethra alnifolia (FACW), Viburnum dentatum (FAC),Toxicodendron radicans (FAC)	Histosol (A1)	5.65 acre	PFO4Cg	PFO
Wetland A-B	Surface water, high water table, saturation	Acer rubrum (FAC), Morella pensylvanica (FAC), Panicum dichotomiflorum (FACW), Juniperus virginiana (FACU)	Depleted Matrix (F3)	0.72 acre	None	PFO/PEM
Wetland C-D	High water table, saturation	Acer rubrum (FAC), Clethra alnifolia (FACW), Phragmites australis (FACW), Onoclea sensibilis (FACW)	Histic Epipedon (A2)	0.02 acre	None	PFO/PEM
Wetland E-F	High water table, saturation, water- stained leaves	Chamaecyparis thyoides (OBL), Clethra alnifolia (FACW), Viburnum dentatum (FAC), Vaccinium corymbosum (FACW), Osmundastrum cinnamomeum (FACW), Toxicodendron radicans (FAC)	Histosol (A1)	0.04 acres	PFO4Cg	PFO4Cg



Wetland ID	Hydrology Indicators	Dominant Vegetation	Hydric Soil Indicator	Size (Acres) or Linear Feet (LF)	NWI Cowardin Classification	Field- Determined Cowardin Classification
Wetland G	High water table, saturation, water- stained leaves	Chamaecyparis thyoides (OBL), Panicum dichotomiflorum (FACW), Phragmites australis (FACW)	Depleted Matrix (F3)	0.49 acre	None	PEM1E
Wetland H1	Saturation, sediment deposits	Acer rubrum (FAC), Juniperus virginiana (FACU), Clethra alnifolia (FACW)	Dark Surface (S7)	0.73 acre	PEM1Fh	PSS
Wetland H2	Surface water, high water table, saturation	Chamaecyparis thyoides (OBL),	Dark Surface (S7)	1.36 acre	PSS1Eh	PEM
Wetland L	Surface water, high water table, saturation	Acer rubrum (FAC), Chamaecyparis thyoides (OBL), Clethra alnifolia (FACW)	Dark Surface (S7)	14.4 acre	PFO4/1C	PFO
	Totals for Site			28.72		

FACW= Facultative Wetland species

FAC = Facultative species

OBL = Obligate species

FACU = Facultative Upland species

3.2.1.3 Proposed Export Cable Route – Island Beach State Park

Two palustrine forested and emergent wetlands were delineated within the WRA, comprising an area of 1.18 acres. The delineated wetlands and observation points are shown on **Figure 3.2.1-4.** Wetland delineation data sheets for upland and wetland observation points are included in **Attachment E**. These wetlands are described in detail below.

Wetland A – The area delineated as Wetland B is 0.10 acres of shrub-scrub wetlands based on Cowardin et al. (1979). It was located during the IBSP wetland delineation event and was delineated although it was outside of the wetland review area. The wetland is crescent shaped, adjacent to the western side of Shore Road. There is 3-5 ft high berm west of the wetland. There was no outlet which demonstrated Wetland A is isolated. It was dominated by red maple (*Acer rubrum*), arrowwood (*Viburnum dentatum*), highbush blueberry (*Vaccinium corymbosum*), common reed (*Phragmites australis*), and catbriar (*Smilax rotundifolia*) providing a hydrophytic vegetation indicator through the dominance test and prevalence test. Wetland hydrology indicators include saturation at 10" below ground surface. A summary of wetland hydrology, vegetation, and soil indicators is provided in **Table 3.2.2-2.** An upland observation point was taken outside of Wetland A and no wetland, hydrophytic vegetation or hydric soil indicators were present.

Wetland B— The area delineated as Wetland B is a 11.86-acre shrub-scrub wetland based on Cowardin et al. (1979). Wetland B is located on the western side of Shore Road and surrounds the maintenance yard to the north, south, east and west. This wetland is by NWI as freshwater forested/shrub wetland and estuarine and marine wetland. It is hydrologically connected to Barnegat Bay though tidal influence appears to be limited to

^{*}Length of the delineation line. This was a linear wetland line with open ends and therefore no area could be calculated.



the immediate shoreline. Dominant species observed within Wetland B include eastern red cedar (Juniperus virginiana) in the tree stratum, highbush blueberry (Vaccinium corymbosum) in the shrub stratum, common reed (Phragmites australis) and Sensitive Fern (Onoclea sensibillis) in the herb stratum and catbrier (Smilax rotundifolia) in the woody vine stratum, providing a hydrophytic vegetation indicator through the dominance test and prevalence index. Wetland hydrology indicators include water table present and saturation. The water table was observed at 16" and saturation was present at 10" below the ground surface. A summary of wetland hydrology, vegetation, and soil indicators is provided in **Table 3.2.2-2**.

An upland observation point was taken outside of Wetland B and no hydric soil indicators were observed. Dominant species within the upland area included eastern red cedar (*Juniperus virginiana*), Northern bayberry (*Myrica pensylvanica*), common reed (*Phragmites australis*) and Virginia creeper (*Parthenocissus quinquefolia*), which did not pass the hydrophytic vegetation indicator tests.

Wetland C – The area delineated as Wetland C is a 0.19 acre shrub-scrub wetlands based on Cowardin et al. (1979). Wetland C is located on the western side of Shore Road north of the maintenance yard and appears to be hydrologically isolated. It is dominated by highbush blueberry (*Vaccinium corymbosum*) in the shrub stratum common reed (*Phragmites australis*) in the herb stratum, and catbrier (*Smilax rotundifolia*) in the woody vine stratum, providing a hydrophytic vegetation indicator through the dominance test and prevalence index. Soils in Wetland C were indicative of hydric soils due to the presence of a hydrogen sulfide (Indicator A4) and stripped matrix (Indicator S6). Soils consisted of a deep saturated peat layer; plant roots were confined to the upper four inches of the soil profile. Hydrology indicators include a high-water table at the surface, saturation at the surface and surface water with a depth of 8". Wetland C is identified by NWI as freshwater forested/shrub wetland. A summary of wetland indicators is provided in **Table 3.2.2-2**.

An upland observation point was taken outside of the Wetland C and no wetland hydrology indicators were observed. Dominant species within the upland area included eastern red cedar in the tree stratum and northern bayberry and southern arrowwood in the shrub stratum and catbrier and Virginia creeper in the woody vine stratum which does not provide a hydrophytic vegetation indicator through the dominance test and prevalence index. The soils did not meet the criterion for hydric soils.



Table 3.2.2-3. Summary of Wetland Delineation Field Survey Results

Wetland ID	Hydrology Indicators	Dominant Vegetation	Hydric Soil Indicator	Size (Acres) or Linear Feet (LF)	NWI Cowardin Classification	Field- Determined Cowardin Classification
Wetland A	Saturation (A3), water marks (B1)	Acer rubrum (FAC) Viburnum dentatum (FAC) Vaccinium corymbosum,(FACW) Phragmites australis (FACW), Smilax rotundifolia (FAC)	Organic bodies (A6), stripped matrix (S6)	0.10 acres	PSS1/3B, E2EM1PD	PSS1/3B, E2EM1PD
Wetland B	Saturation (A3), high water table (A2)	Phragmites australis (FACW) Juniperus virginiana (FACU), Vaccinium corymbosum (FACW), Onoclea sensibillis (FACW), Smilax rotundifolia (FAC)	Redox depressions (F8)	1.10 acre	None	PSS1/3B, E2EM1PD
Wetland C	Saturation (A3), high water table (A2), hydrogen sulfide present (C1)	Phragmites australis (FACW), Smilax rotundifolia (FAC), Vaccinium corymbosum (FACW)	Hydrogen sulfide (A4), stripped matrix (S6)	0.08 acre	PEM1E, PEM1C	PSS1/3B, E2EM1PD
	Totals for Site			1.28 acres		

FACW= Facultative Wetland species

FAC = Facultative species

OBL = Obligate species

FACU = Facultative Upland species





Figure 3.2.2-3. Delineated Wetlands and Watercourses Map- IBSP



3.3 Watercourse Delineation Field Survey

Three watercourses were delineated during the field surveys. The location of these features are provided in Figure 3.3-1 through Figure 3.3-3 and the length and area of each watercourse is provided in Table 3.3-1. The Oyster Creek Discharge Channel is a manmade feature, dredged to facilitate the operation of the decommissioned nuclear power plant. It is approximately 145 feet in width and tidally influenced from its connection to Oyster Creek and Barnegat Bay to the east. The Manmade Discharge Channel is identified as "E1UBL" (Estuarine, subtidal, unconsolidated bottom, saltwater tidal) by NWI. One stream ("Oyster Creek Stream") located at the edge of the JCP&L (Block 1001, Lot 4.06) and Holtec property (Block 41, Lot 43) was also delineated and connects to Oyster Creek. The stream is approximately 30 feet in width with an eroding bank on the western side. The stream was delineated up to the Discharge Drive road crossing, where a fivebarrel concrete culvert system is in place. The culverts are each approximately 60 inches in diameter. During the field survey there was a heavy flow through all five barrels during the ebb tide. The Oyster Creek Steam is identified as "E1UBIx" (Estuarine, Subtidal, Unconsolidated Bottom, Excavated) by NWI. Portions of the Oyster Creek Discharge Channel and Oyster Creek Stream are outside of the Wetland Review Area. The manmade ditch system on the Holtec Property (Block 100, Lot 1.06) are ditches that are eight to 15 feet in width, and appear to be permanently flooded with a very deep organic substrate composed of leaf litter and broken branches and tree limbs. No discernable flow was evident in the ditches except where the flow was constricted by culverts running through the berms in two locations. The ditches are best described as "R3UBHx" (Riverine, Upper Perennial, Unconsolidated Bottom, Permanently Flooded, Excavated) wetlands. Totals in Table 3.3-1 below include areas within and outside the Wetland Review Area.

Table 3.3-1. Summary of Watercourse Delineation Field Survey Results

Watercourse	Length (linear ft.)	Area (sq ft)	Abutting Wetland
Oyster Creek Discharge Channel	2,871	446,926	B,C,L
Oyster Creek Tributary	1,002	60,113	M,N
Holtec Parcel Manmade Ditch System	10,275	274,398	A,B,C,E
Totals for Site	14,148	781,437	

3.4 Wildlife

3.4.1 OC WRA

3.4.1.1 Proposed Export Cable Route - Lacey and Ocean Townships

While no species-specific wildlife studies were conducted, all wildlife observations made in association with the wetlands delineation and ecological community mapping field studies were recorded. Birds were identified by song and/or direct observation; mammals were identified by direct observation and/or tracks. Fish and amphibians were identified by direct observation.

Fish – Banded killifish (*Fundulus diaphanus*) were observed in inundated areas of Wetland L and in the excavated ditch east of Route 9 during the site surveys.

Amphibians – Green frogs (*Rana clamitans*) were observed in or proximate to the wetlands during the site surveys. No toads or salamanders were observed.



Reptiles – One male box turtle was observed near Wetland L, and three box turtles was observed within or adjacent to Wetland M. One garter snake (*Thamnophis sirtalis*) was observed near Wetland M and two snapping turtles were observed within Wetland M.

Birds – A total of 22 species of birds were observed during the June 2, 2021 site survey; 18 of which were common passerine species. Turkey vultures (*Cathartes aura*) were observed soaring over the site. Dominant passerine bird species were the gray catbird, robin (*Turdus migratorius*), prairie warbler, and Carolina chickadee (*Parus caroliniensis*). Laughing gulls (*Lanus atricilla*), and common terns (*Sterna hirundo*) were observed by the Oyster Creek Tributary.

Mammals – Gray squirrels (*Sciurus carolinensis*) were observed near Wetlands L and M, and sign (tracks and droppings only) of white-tailed deer was observed at several locations. No large animal burrows were observed during the site surveys. No structures, large dead trees, or trees with cavities or exfoliating bark that could provide roosting habitat for bats were observed.

3.4.1.2 Proposed Onshore Substation at Oyster Creek Generation Station

While no species-specific wildlife studies were conducted, all wildlife observations made in association with the wetlands delineation and habitat assessment field studies were recorded. Birds were identified by song and/or direct observation; mammals were identified by direct observation and/or tracks. Fish and amphibians were identified by direct observation.

Fish – One Atlantic menhaden (*Brevoortia tyrannus*) was observed in the Discharge Channel during the site surveys.

Amphibians – Green frogs (*Rana clamitans*) were observed in or proximate to the wetlands during the site surveys. No toads or salamanders were observed.

Reptiles – One male box turtle (*Terrapene carolina*) was observed on the Forked River II, LLC parcel in Wetland G, and one male box turtle was observed along Privateer Drive near Wetland J. No lizards or snakes were observed.

Birds – A total of 35 species of birds were observed during the May 2020, August 2020, and September 2020 site surveys; 24 of which were common passerine species. One Northern harrier (*Circus cyaneus*), a Stateendangered species, was observed over the Forked River parcel. Turkey vultures (*Cathartes aura*) were observed soaring over the site. Dominant passerine bird species were the gray catbird, robin (*Turdus migratorius*), prairie warbler, and Carolina chickadee (*Parus caroliniensis*). Canada geese (*Branta canadensis*), laughing gulls (*Lanus atricilla*), herring gulls (*Larus argentatus*), double-crested cormorants (*Phalacrocorax auritus*), and common terns (*Sterna hirundo*) were observed by the Discharge Channel.

Mammals – Gray squirrels (*Sciurus carolinensis*) were observed near Wetlands E and F, and sign (tracks and droppings only) of white-tailed deer (*Odocoileus virginianus*) was observed at several locations. Raccoon (*Procyon lotor*) tracks were also observed along Oyster Creek and the Discharge Channel. No large animal burrows were observed during the site surveys. A pile of shells and flattened vegetation along a slope were noted at the junction of Oyster Creek with the Discharge Channel, but no Northern river otters (*Lontra canadensis*) were observed. No structures, large dead trees, or trees with cavities or exfoliating bark that could provide roosting habitat for bats were observed.



3.4.1.3 Proposed Export Cable Route – Island Beach State Park

While no species-specific wildlife studies were conducted, all wildlife observations made in association with the wetlands delineation and ecological community mapping field studies were recorded. Birds were identified by song and/or direct observation; mammals were identified by direct observation and/or tracks.

Fish – No fish were observed in or proximate to the wetlands during the site survey.

Amphibians - No amphibians were observed in or proximate to the wetlands during the site survey.

Reptiles – One box turtle shell with a decaying turtle was observed near Wetland B.

Birds – Birds observed during the site surveys were limited to year-round resident species common to coastal environments. Species observed consisted of Carolina wren (*Thryothorus Iudovicianus*), robin (*Turdus migratorius*), blue jay (*Cyanocitta cristata*), goldfinch (*Spinus tristus*), Northern harrier (*Circus cyaneus*), herring gull (*Larus argentatus*), black-capped chickadee (*Parus atricapillus*), and gray catbird (*Dumetella carolinensis*).

Mammals – No mammals were observed during the site surveys; droppings of Eastern cottontails (*Sylvilagus floridanus*) were observed

3.5 Species-Specific Assessment

3.5.1 OC WRA

A database search with the NJDEP Natural Heritage Program and the USFWS IPaC Mapper indicated seven state-listed avian species, two state-listed reptile species, one state-listed amphibian species, two federally-listed mammal species, and two state and federally-listed plant species as potentially occurring on or within 1.5 miles of the WRA. A summary of site observations of special concern species and listed species, along with habitat potential for each of the species is presented below (**Table 3.6.2-1**). The publication "Endangered and Threatened Wildlife of New Jersey" (Beans and Niles; 2003) was used as a reference for the field work and assessment, as were species dossiers on NJDEP's website (**Table 3.6.2-1**). There were no lizards observed within the WRA. The lack of ground cover (fallen trees, bark, or deep leaf litter) may limit the site's attractiveness to some amphibians and reptiles. Species that were directly observed at the WRA or require habitat specific surveys are discussed in further detail below. Special concern species are not included in the table below.

Table 3.6.2-1. Federal and State endangered and threatened species with potential to occur within the Oyster Creek Project Area.

Species Common	Species Scientific	Status			
	Mammals				
Bobcat	Lynx rufus	SE			
Fin whale	Balaenoptera physalus	FE, SE			
Humpback whale	Megaptera noveangliae	FE, SE			
North Atlantic right whale	Eubalaena glacialis	FE, SE			
Birds					
Bald eagle	Haliaeetus leucocephalus	SE			
Barred owl	Strix varia	ST			
Osprey	Pandion haliaetus	ST			



Species Common	Species Scientific	Status		
Black skimmer	Rynchops niger	SE		
Black-crowned night heron	Nycticorax nycticorax	ST		
Grasshopper sparrow	Ammodramus savannarum	ST		
Least tern	Sternula antillarum	SE		
Northern harrier	Circus cyaneus	SE		
Peregrine falcon	Falco peregrinus	SE		
Roseate tern	Sterna dougallii dougallii	FE, SE		
Yellow-crowned night heron	Nyctanassa violacea	ST		
	Reptiles			
Northern pine snake	Pituophis melanoleucus melanoleucus	ST		
Timber rattlesnake	Crotalus horridus horridus	SE		
Atlantic green turtle	Chelonia mydas	FT, ST		
Atlantic loggerhead	Caretta caretta	FT, SE		
Kemp's Ridley sea turtle	Lepidochelys kempii	FE, ST		
Amphibians				
Pine barrens treefrog	Hyla andersonii	ST		

Status: FT - Federally Threatened, FE - Federally Endangered, SE - State Endangered, ST - State Threatened

Eastern Box Turtle is listed as a Special Concern Species in New Jersey occurring within 1.5 miles of the site. Because Eastern box turtle is a Special Concern Species, this species was not included in the table above but was observed during the site survey. One adult male box turtle was observed in June 2021 near Wetland L, and three box turtles were observed within or near Wetland M. This species inhabits open woodlands and meadows and are usually found not far from streams or ponds (Conserve Wildlife Foundation of New Jersey 2019). Additionally, the dense cover and lack of human presence/vehicular traffic renders the site attractive for box turtles.

Northern Pine Snake is listed as a Threatened Species in New Jersey occurring on the site. No northern pine snakes were observed during the site survey. Beans and Niles cite "Pine snakes in New Jersey require dry pine-oak forest types growing on very infertile sandy soils". This habitat type is limited on the site to open or weakly vegetated areas between Oyster Creek and the Oyster Creek tributary.

Pine Barrens Treefrog is listed as a Threatened Species in New Jersey occurring on the site. No Pine Barrens treefrogs were observed or heard during the site survey. Beans and Niles cite "Structural characteristics of preferred habitats include an open canopy, a dense shrub layer, and heavy ground cover." This habitat type is present on portions of the site, and there are ample open water (ditches, small ponds, and seasonally flooded herbaceous marshes) for breeding.

Barred Owl is listed as a Threatened Species in New Jersey occurring on the site. No barred owls were observed or heard during the site survey. Beans and Niles cite "These owls require wet woods that contain large trees with cavities suitable for nesting." This habitat type was not observed on the site; the few large trees (red maples and pitch pines) do not have cavities that would offer nesting habitat for owls.



Northern Harrier is listed as an Endangered Species (breeding population only) in New Jersey occurring on the site. Suitable habitat (open early successional fields) are not present on the site. No evidence of nesting (nests, adults carrying nesting material or prey items) was observed in 2021.

Swamp Pink is listed as a Federally-threatened species and as an endangered species in New Jersey. Lacey Township, NJ is cited by USFWS as being documented for the presence of swamp pink. The wetland delineation was conducted by field personnel with experience in identifying rare plants such as swamp pink. No specimens of swamp pink nor suitable habitat was observed on the site. While several of the sympatric species (red maple, sweet pepperbush, sphagnum moss and cinnamon fern) are present, suitable habitat is very limited and the wetland hummocks/microtopographic relief cited in the USFWS dossier is limited on the site.

Bald Eagle is listed as an Endangered Species in New Jersey. No bald eagles were observed during the site investigation. The site itself does not offer foraging opportunities for bald eagles though they may forage over the open waters of Barnegat Bay and Oyster Creek to the east and south of the site.

Table 3.6.2-2. State and Federal Listed birds that have the potential to pass through the Oyster Creek Project Areas.

Common Name	Scientific Name	NJ Status*	Federal Status*
American Oystercatcher	Haematopus palliates	SC - Breeding + Non- breeding	BCC
Piping Plover	Charadrius melodus	E - Breeding + Non- breeding	Т
Red Knot	Calidris canutus rufa	E - Non-breeding	T - Non-breeding
Bald Eagle	Haliaeetus leucocephalus	E - Breeding, T - Non- breeding	BCC
Peregrine Falcon	Falco peregrinus	E - Breeding, SC - Non- breeding	BCC
Northern Harrier	Circus cyaneus	E - Breeding, SC - Non- breeding	-
Cooper's Hawk	Accipiter cooperii	SC - Breeding	-
Osprey	Pandion haliaetus	T - Breeding	-
Barred Owl	Strix varia	T - Breeding + Non- breeding	•
Cattle Egret	Bubulcus ibis	T - Breeding, SC - Non- breeding	•
Snowy Egret	Egretta thula	SC - Breeding	BCC
Black-crowned Night-heron	Nycticorax nycticorax	T - Breeding, SC - Non- breeding	-
Yellow-crowned Night- Heron	Nyctanassa violacea	T - Breeding + Non- breeding	-
Great Blue Heron	Ardea herodias	SC - Breeding	-
Tricolored Heron	Egretta tricolor	SC - Breeding + Non- breeding	-
Little Blue Heron	Egretta caerulea	SC - Breeding + Non- breeding	-
Glossy Ibis	Plegadis falcinellus	SC - Breeding	-
Black-throated Blue Warbler**	Dendroica caerulescens	SC - Breeding	-
Black-throated Green Warbler**	Dendroica virens	SC - Breeding	-



Common Name	Scientific Name	NJ Status*	Federal Status*	
Northern Parula**	Parula americana	SC - Breeding	-	
Worm-eating Warbler**	Helmitheros vermivorum	SC - Breeding	BCC	
Saltmarsh Sparrow**	Ammodramus caudacutus	SC - Breeding	BCC	
Grasshopper Sparrow	Ammodramus savannarum	T - Breeding, SC - Non- breeding	-	
Wood Thrush**	Hylocichla mustelina	SC - Breeding	BCC	
Gray-cheeked Thrush	Catharus minimus	SC - Non-breeding	-	
Veery**	Catharus fuscescens	SC - Breeding	-	
Black Skimmer	Rynchops niger	E - Breeding + Non- breeding	BCC	
Common Tern	Sterna hirundo	SC - Breeding	-	
Gull-billed Tern	Gelochelidon nilotica	SC - Breeding + Non- breeding	BCC	
Least Tern	Sterna antillarum	E - Breeding + Non- breeding	BCC	
Roseate Tern	Sterna dougallii	E - Breeding + Non- breeding	E	
Source: NJDEP 2012 and USFWS IPaC database (USFWS 2018b).				

^{*} E = Endangered, T = Threatened, SC = Special Concern, BCC = Birds of Conservation Concern

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Water's Edge Environmental, LLC. (2019). Development Constraints Analysis for Block 479, Lots 74, 76, 94.01, 97, 98 & 99 in Upper Township, Cape May County, NJ. Report prepared for RC Cape May Holdings, LLC. Ocean City, New Jersey.



Attachment A. USDA NRCS Web Soil Survey Custom Soil Resource Report



Natural Resources Conservation

Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Ocean County, New Jersey



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2 053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

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After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

-

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

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Blowout

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Borrow Pit

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Clay Spot

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Closed Depression

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Gravel Pit

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Gravelly Spot

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Landfill Lava Flow

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Marsh or swamp

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Mine or Quarry

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Miscellaneous Water

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Perennial Water
Rock Outcrop

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Saline Spot

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Sandy Spot

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Severely Eroded Spot

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Sinkhole

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Sodic Spot

Slide or Slip

8

Spoil Area



Stony Spot



Very Stony Spot



Wet Spot Other



Special Line Features

Water Features

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Streams and Canals

Transportation

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Rails

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Interstate Highways

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US Routes

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Major Roads

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Local Roads

Background

Marie Control

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Ocean County, New Jersey Survey Area Data: Version 19, Aug 31, 2021

Soil map units are labeled (as space allows) for map scales 1:50.000 or larger.

Date(s) aerial images were photographed: Apr 13, 2021—Sep 14, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HorsC	Hooksan fine sand, 2 to 10 percent slopes	2.7	99.3%
WMa1	Mantoloking sand, 0 to 1 meter water depth, flat	0.0	0.7%
Totals for Area of Interest		2.7	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An association is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Ocean County, New Jersey

HorsC—Hooksan fine sand, 2 to 10 percent slopes

Map Unit Setting

National map unit symbol: 2xhph

Elevation: 0 to 30 feet

Mean annual precipitation: 41 to 50 inches Mean annual air temperature: 46 to 58 degrees F

Frost-free period: 190 to 260 days

Farmland classification: Not prime farmland

Map Unit Composition

Hooksan and similar soils: 85 percent Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hooksan

Setting

Landform: Dunes on barrier islands

Landform position (two-dimensional): Shoulder Landform position (three-dimensional): Rise

Down-slope shape: Convex Across-slope shape: Convex, linear Parent material: Eolian sands

Typical profile

A - 0 to 6 inches: fine sand C - 6 to 90 inches: sand

Properties and qualities

Slope: 2 to 10 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Excessively drained

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00

to 20.00 in/hr)

Depth to water table: About 79 to 90 inches

Frequency of flooding: None Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm) Available water supply, 0 to 60 inches: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: A Hydric soil rating: No

Minor Components

Appoquinimink, very frequently flooded

Percent of map unit: 5 percent Landform: Tidal marshes

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf

Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

Transquaking, very frequently flooded

Percent of map unit: 5 percent Landform: Tidal marshes

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf

Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

Atsion, tide flooded

Percent of map unit: 5 percent

Landform: Barrier beaches, tidal marshes
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf

Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

WMa1—Mantoloking sand, 0 to 1 meter water depth, flat

Map Unit Setting

National map unit symbol: 2thv2

Elevation: 0 feet

Mean annual precipitation: 41 to 49 inches Mean annual air temperature: 53 to 60 degrees F

Frost-free period: 365 days

Farmland classification: Not prime farmland

Map Unit Composition

Mantoloking, 0 to 1 meter water depth, and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mantoloking, 0 To 1 Meter Water Depth

Setting

Landform: Flood-tidal delta flats

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf

Down-slope shape: Linear Across-slope shape: Linear

Parent material: Inactive flood-tidal delta sandy lagoonal deposits

Typical profile

Aseg - 0 to 7 inches: sand ACseg - 7 to 13 inches: sand Cseg - 13 to 67 inches: sand

Asegb - 67 to 79 inches: sand

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Subaqueous

Capacity of the most limiting layer to transmit water (Ksat): High to very high (1.98

to 99.19 in/hr)

Depth to water table: About 0 inches Frequency of flooding: Very frequent

Frequency of ponding: None

Calcium carbonate, maximum content: 5 percent

Maximum salinity: Strongly saline (16.0 to 35.0 mmhos/cm)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydrologic Soil Group: D Hydric soil rating: Yes

Minor Components

Cottman, 0 to 1 meter water depth

Percent of map unit: 10 percent

Landform: Lagoon bottoms, washover-fan slopes Landform position (two-dimensional): Backslope Landform position (three-dimensional): Dip Down-slope shape: Concave, convex

Across-slope shape: Linear Hydric soil rating: Yes

Demas, 0 to 1 meter water depth

Percent of map unit: 5 percent

Landform: Washover-fan flats, washover-fan slopes
Landform position (two-dimensional): Summit, backslope

Landform position (three-dimensional): Talf, dip

Down-slope shape: Linear, convex Across-slope shape: Linear

Hydric soil rating: Yes

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NRCS Natural

Natural Resources Conservation Service A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Ocean County, New Jersey

Oyster Creek



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2 053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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Custom Soil Resource Report Soil Map



MAP LEGEND

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Water Features

Transportation

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Background

Spoil Area

Stony Spot

Wet Spot

Other

Rails

US Routes

Major Roads

Local Roads

Very Stony Spot

Special Line Features

Streams and Canals

Interstate Highways

Aerial Photography

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

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Clay Spot

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Gravelly Spot

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Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Ocean County, New Jersey Survey Area Data: Version 17, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Sep 16, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

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Map Unit Legend

Map Unit Symbol	Map Unit Symbol Map Unit Name		Percent of AOI	
AptAv	Appoquinimink-Transquaking- Mispillion complex, 0 to 1 percent slopes, very frequently flooded	7.1	0.6%	
AtsAO	Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area	110.7	9.9%	
BerAr	Berryland sand, 0 to 2 percent slopes, rarely flooded 0.0		0.0%	
DocBO	Downer loamy sand, 0 to 5 percent slopes, Northern Tidewater Area	10.9	1.0%	
LakB	Lakehurst sand, 0 to 5 percent slopes	501.5	45.0%	
LasB	Lakewood sand, 0 to 5 percent slopes	38.7	3.5%	
MakAt	Manahawkin muck, 0 to 2 percent slopes, frequently flooded	166.5	14.9%	
PssA	Psamments, 0 to 2 percent slopes	33.4	3.0%	
PstAt	Psammaquents, sulfidic substratum, 0 to 2 percent slopes, frequently flooded	172.4	15.5%	
WATER	Water	3.3	0.3%	
WHe1	Herring Creek mucky silt loam, 0 to 1 meter water depth	71.0	6.4%	
Totals for Area of Interest		1,115.7	100.0%	

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made

up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An association is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Ocean County, New Jersey

AptAv—Appoquinimink-Transquaking-Mispillion complex, 0 to 1 percent slopes, very frequently flooded

Map Unit Setting

National map unit symbol: vk14

Elevation: 10 to 120 feet

Mean annual precipitation: 28 to 59 inches Mean annual air temperature: 46 to 79 degrees F

Frost-free period: 161 to 231 days

Farmland classification: Farmland of unique importance

Map Unit Composition

Appoquinimink, very frequently flooded, and similar soils: 40 percent Transquaking, very frequently flooded, and similar soils: 30 percent Mispillion, very frequently flooded, and similar soils: 25 percent

Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Appoquinimink, Very Frequently Flooded

Setting

Landform: Tidal marshes

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf

Down-slope shape: Linear Across-slope shape: Concave

Parent material: Loamy fluviomarine deposits over herbaceous organic material

Typical profile

Ag - 0 to 12 inches: mucky silt loam Cg - 12 to 30 inches: silt loam Oe - 30 to 80 inches: mucky peat

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to

high (0.20 to 2.00 in/hr)

Depth to water table: About 0 inches Frequency of flooding: Very frequent Frequency of ponding: Frequent

Salinity, maximum in profile: Strongly saline (16.0 to 32.0 mmhos/cm) Available water storage in profile: Very high (about 17.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8w

Hydrologic Soil Group: B/D Hydric soil rating: Yes

Description of Transquaking, Very Frequently Flooded

Setting

Landform: Tidal marshes

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Dip

Down-slope shape: Linear Across-slope shape: Linear

Parent material: Herbaceous organic material over loamy

Typical profile

Oe - 0 to 14 inches: mucky peat Oa - 14 to 60 inches: muck Cg - 60 to 90 inches: silty clay

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to

moderately high (0.06 to 0.20 in/hr) Depth to water table: About 0 inches Frequency of flooding: Very frequent Frequency of ponding: Frequent

Salinity, maximum in profile: Moderately saline to strongly saline (8.0 to 32.0

mmhos/cm)

Available water storage in profile: Very high (about 26.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8w

Hydrologic Soil Group: B/D Hydric soil rating: Yes

Description of Mispillion, Very Frequently Flooded

Setting

Landform: Tidal marshes

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf

Down-slope shape: Linear Across-slope shape: Concave

Parent material: Herbaceous organic material over loamy marine deposits and/or

loamy fluviomarine deposits

Typical profile

Oe - 0 to 10 inches: mucky peat Oa - 10 to 26 inches: muck Ca - 26 to 90 inches: silt loam

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20

to 0.60 in/hr)

Depth to water table: About 0 inches Frequency of flooding: Very frequent Frequency of ponding: Frequent

Salinity, maximum in profile: Moderately saline to strongly saline (8.0 to 16.0

mmhos/cm)

Available water storage in profile: Very high (about 15.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8w

Hydrologic Soil Group: C/D Hydric soil rating: Yes

Minor Components

Hammonton

Percent of map unit: 5 percent Landform: Flats, depressions

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope

Down-slope shape: Linear, concave Across-slope shape: Linear, concave

Hydric soil rating: No

AtsAO—Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area

Map Unit Setting

National map unit symbol: 2thvz

Elevation: 0 to 230 feet

Mean annual precipitation: 41 to 50 inches Mean annual air temperature: 46 to 66 degrees F

Frost-free period: 190 to 260 days

Farmland classification: Farmland of unique importance

Map Unit Composition

Atsion and similar soils: 90 percent Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Atsion

Setting

Landform: Flats, drainageways, deflation flats, depressions Landform position (two-dimensional): Toeslope, footslope

Landform position (three-dimensional): Talf, dip

Down-slope shape: Linear, concave

Across-slope shape: Linear, concave

Parent material: Sandy eolian deposits and/or fluviomarine deposits

Typical profile

Oi - 0 to 2 inches: peat A - 2 to 4 inches: sand E - 4 to 26 inches: sand Bhs - 26 to 34 inches: sand Cg - 34 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to

very high (0.71 to 19.98 in/hr)

Depth to water table: About 0 to 12 inches

Frequency of flooding: None Frequency of ponding: None

Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm) Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: A/D Hydric soil rating: Yes

Minor Components

Lakehurst

Percent of map unit: 5 percent Landform: Flats, low hills

Landform position (two-dimensional): Summit, footslope

Landform position (three-dimensional): Talf, rise

Down-slope shape: Linear

Across-slope shape: Linear, convex

Hydric soil rating: No

Berryland, occasionally flooded

Percent of map unit: 5 percent

Landform: Flats, drainageways, depressions, deflation flats

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf, dip

Down-slope shape: Linear, concave Across-slope shape: Linear, concave

Hydric soil rating: Yes

BerAr—Berryland sand, 0 to 2 percent slopes, rarely flooded

Map Unit Setting

National map unit symbol: rdtc

Elevation: 0 to 140 feet

Mean annual precipitation: 28 to 59 inches Mean annual air temperature: 46 to 79 degrees F

Frost-free period: 161 to 231 days

Farmland classification: Farmland of unique importance

Map Unit Composition

Berryland, rarely flooded, and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Berryland, Rarely Flooded

Setting

Landform: Flats, drainageways, depressions Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Base slope, dip

Down-slope shape: Linear, concave Across-slope shape: Linear, concave

Parent material: Sandy fluviomarine deposits

Typical profile

Ag - 0 to 11 inches: sand Bh - 11 to 19 inches: sand Bg - 19 to 32 inches: sand B'h - 32 to 40 inches: sand Cg1 - 40 to 44 inches: sand

Cg2 - 44 to 80 inches: stratified sand to sandy loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00

to 20.00 in/hr)

Depth to water table: About 0 to 6 inches

Frequency of flooding: Rare Frequency of ponding: Rare

Available water storage in profile: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: A/D Hydric soil rating: Yes

Minor Components

Atsion

Percent of map unit: 5 percent

Landform: Flats

Landform position (two-dimensional): Footslope Landform position (three-dimensional): Talf, dip

Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

Mullica, rarely flooded

Percent of map unit: 5 percent

Landform: Flood plains, drainageways, depressions Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope

Down-slope shape: Linear, concave Across-slope shape: Linear, concave

Hydric soil rating: Yes

Manahawkin, frequently flooded

Percent of map unit: 5 percent Landform: Swamps, flood plains Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

DocBO—Downer loamy sand, 0 to 5 percent slopes, Northern Tidewater Area

Map Unit Setting

National map unit symbol: 2thw1

Elevation: 60 to 90 feet

Mean annual precipitation: 41 to 50 inches Mean annual air temperature: 46 to 66 degrees F

Frost-free period: 190 to 260 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Downer and similar soils: 80 percent Minor components: 20 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Downer

Setting

Landform: Knolls, low hills

Landform position (two-dimensional): Summit, shoulder Landform position (three-dimensional): Interfluve, rise

Down-slope shape: Convex, linear

Across-slope shape: Linear

Parent material: Loamy fluviomarine deposits

Typical profile

Ap - 0 to 10 inches: loamy sand BE - 10 to 16 inches: loamy sand Bt - 16 to 28 inches: sandy loam C1 - 28 to 48 inches: loamy sand C2 - 48 to 80 inches: sand

Properties and qualities

Slope: 0 to 5 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to

high (0.60 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Salinity, maximum in profile: Nonsaline (0.0 to 0.2 mmhos/cm) Available water storage in profile: Moderate (about 6.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: A Hydric soil rating: No

Minor Components

Hammonton

Percent of map unit: 10 percent

Landform: Flats, broad interstream divides Landform position (two-dimensional): Shoulder Landform position (three-dimensional): Dip

Down-slope shape: Convex Across-slope shape: Linear Hydric soil rating: No

Atsion

Percent of map unit: 5 percent

Landform: Drainageways, flats, depressions, deflation flats Landform position (two-dimensional): Footslope, toeslope

Landform position (three-dimensional): Dip, talf

Down-slope shape: Concave, linear

Across-slope shape: Linear Hydric soil rating: Yes

Evesboro

Percent of map unit: 5 percent

Landform: Flats, fluviomarine terraces, knolls, dunes Landform position (three-dimensional): Riser, rise

Down-slope shape: Linear, convex Across-slope shape: Linear, convex

Hydric soil rating: No

LakB—Lakehurst sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: rdtz Elevation: 20 to 150 feet

Mean annual precipitation: 28 to 59 inches Mean annual air temperature: 46 to 79 degrees F

Frost-free period: 161 to 231 days

Farmland classification: Farmland of local importance

Map Unit Composition

Lakehurst and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lakehurst

Setting

Landform: Flats, dunes

Down-slope shape: Linear, convex Across-slope shape: Linear, convex

Parent material: Sandy fluviomarine deposits

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material

A - 2 to 4 inches: sand E - 4 to 18 inches: sand Bh - 18 to 32 inches: sand BC - 32 to 45 inches: sand C - 45 to 54 inches: sand Cg - 54 to 80 inches: sand

Properties and qualities

Slope: 0 to 5 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Moderately well drained

Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00

to 19.98 in/hr)

Depth to water table: About 18 to 42 inches

Frequency of flooding: None Frequency of ponding: None

Available water storage in profile: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4w

Hydrologic Soil Group: A Hydric soil rating: No

Minor Components

Berryland, rarely flooded

Percent of map unit: 5 percent

Landform: Flats, drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope

Down-slope shape: Linear, concave Across-slope shape: Linear, concave

Hydric soil rating: Yes

Atsion, rarely flooded

Percent of map unit: 5 percent Landform: Flats, depressions

Landform position (two-dimensional): Footslope, toeslope Landform position (three-dimensional): Base slope, dip, talf

Down-slope shape: Linear, concave Across-slope shape: Linear, concave

Hydric soil rating: Yes

Quakerbridge

Percent of map unit: 5 percent

Landform: Flats, knolls

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear, convex

Across-slope shape: Linear Hydric soil rating: No

LasB—Lakewood sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: rdv1 Elevation: 20 to 150 feet

Mean annual precipitation: 28 to 59 inches Mean annual air temperature: 46 to 79 degrees F

Frost-free period: 161 to 231 days

Farmland classification: Farmland of local importance

Map Unit Composition

Lakewood and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lakewood

Setting

Landform: Flats, knolls

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear, convex

Across-slope shape: Linear

Parent material: Sandy fluviomarine deposits

Typical profile

A - 0 to 3 inches: sand E - 3 to 11 inches: sand

Bh - 11 to 13 inches: loamy sand BC - 13 to 30 inches: sand C1 - 30 to 46 inches: sand C2 - 46 to 80 inches: sand

Properties and qualities

Slope: 0 to 5 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Excessively drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00

to 20.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Available water storage in profile: Very low (about 1.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: A Hydric soil rating: No

Minor Components

Quakerbridge

Percent of map unit: 5 percent

Landform: Flats, knolls

Down-slope shape: Linear, convex

Across-slope shape: Linear Hydric soil rating: No

Lakehurst

Percent of map unit: 5 percent Landform: Flats, depressions

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope

Down-slope shape: Linear, concave Across-slope shape: Linear, concave

Hydric soil rating: No

Atsion, rarely flooded

Percent of map unit: 5 percent Landform: Flats, depressions

Landform position (two-dimensional): Footslope, toeslope Landform position (three-dimensional): Base slope, dip, talf

Down-slope shape: Linear, concave Across-slope shape: Linear, concave

Hydric soil rating: Yes

MakAt—Manahawkin muck, 0 to 2 percent slopes, frequently flooded

Map Unit Setting

National map unit symbol: rdv3

Elevation: 0 to 140 feet

Mean annual precipitation: 28 to 59 inches Mean annual air temperature: 46 to 79 degrees F

Frost-free period: 161 to 231 days

Farmland classification: Farmland of unique importance

Map Unit Composition

Manahawkin, frequently flooded, and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Manahawkin, Frequently Flooded

Setting

Landform: Swamps, flood plains Down-slope shape: Linear Across-slope shape: Linear

Parent material: Organic, woody material over sandy alluvium

Typical profile

Oa1 - 0 to 13 inches: muck Oa2 - 13 to 26 inches: muck Oa3 - 26 to 47 inches: muck Cg - 47 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00

to 20.00 in/hr)

Depth to water table: About 0 to 6 inches

Frequency of flooding: Frequent Frequency of ponding: Frequent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0

mmhos/cm)

Available water storage in profile: Very high (about 17.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7w

Hydrologic Soil Group: A/D Hydric soil rating: Yes

Minor Components

Atsion

Percent of map unit: 5 percent

Landform: Flats

Landform position (two-dimensional): Footslope Landform position (three-dimensional): Dip, talf

Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

Berryland, occasionally flooded

Percent of map unit: 5 percent

Landform: Flats, drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope

Down-slope shape: Linear, concave Across-slope shape: Linear, concave

Hydric soil rating: Yes

Mullica, rarely flooded

Percent of map unit: 5 percent

Landform: Flood plains, drainageways, depressions Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope

Down-slope shape: Linear, concave Across-slope shape: Linear, concave

Hydric soil rating: Yes

PssA—Psamments, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2xhpd

Elevation: 0 to 230 feet

Mean annual precipitation: 41 to 50 inches Mean annual air temperature: 46 to 58 degrees F

Frost-free period: 190 to 260 days

Farmland classification: Not prime farmland

Map Unit Composition

Psamments, nearly level, and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Psamments, Nearly Level

Setting

Landform: Flats

Landform position (two-dimensional): Footslope Landform position (three-dimensional): Talf

Down-slope shape: Linear Across-slope shape: Linear

Parent material: Sandy human-transported material

Typical profile

^A - 0 to 12 inches: coarse sand

^C1 - 12 to 36 inches: gravelly coarse sand

^C2 - 36 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00

to 20.00 in/hr)

Depth to water table: About 48 inches Frequency of flooding: Occasional Frequency of ponding: None

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0

mmhos/cm)

Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: A Hydric soil rating: No

Minor Components

Mullica

Percent of map unit: 5 percent

Landform: Drainageways on flats, swales on flats, depressions on flats

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Dip, talf

Down-slope shape: Linear, concave Across-slope shape: Linear, concave

Hydric soil rating: Yes

Atsion

Percent of map unit: 5 percent

Landform: Drainageways on flats, depressions on flats, deflation flats on flats

Landform position (two-dimensional): Toeslope, footslope

Landform position (three-dimensional): Talf, dip

Down-slope shape: Linear, concave Across-slope shape: Linear, concave

Hydric soil rating: Yes

Berryland, rarely flooded

Percent of map unit: 5 percent

Landform: Drainageways on flats, depressions on flats, deflation flats on flats

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf, dip

Down-slope shape: Linear, concave Across-slope shape: Linear, concave

Hydric soil rating: Yes

PstAt—Psammaquents, sulfidic substratum, 0 to 2 percent slopes, frequently flooded

Map Unit Setting

National map unit symbol: 2xhp8

Elevation: 0 to 30 feet

Mean annual precipitation: 41 to 50 inches Mean annual air temperature: 46 to 58 degrees F

Frost-free period: 190 to 260 days

Farmland classification: Not prime farmland

Map Unit Composition

Psammaquents, sulfidic substratum, frequently flooded, and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Psammaquents, Sulfidic Substratum, Frequently Flooded

Setting

Landform: Flats

Landform position (two-dimensional): Footslope Landform position (three-dimensional): Talf

Down-slope shape: Linear Across-slope shape: Linear

Parent material: Sandy lateral spread deposits over organic material

Typical profile

^A - 0 to 12 inches: coarse sand ^C - 12 to 36 inches: gravelly sand 20ese1 - 36 to 43 inches: mucky peat 20ese2 - 43 to 80 inches: mucky peat

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to

very high (0.60 to 20.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: Frequent

Frequency of ponding: None

Salinity, maximum in profile: Very slightly saline to strongly saline (2.0 to 16.0

mmhos/cm)

Available water storage in profile: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8w

Hydrologic Soil Group: A/D

Hydric soil rating: Yes

Minor Components

Appoquinimink, very frequently flooded

Percent of map unit: 5 percent Landform: Tidal marshes

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf

Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

Transquaking, very frequently flooded

Percent of map unit: 5 percent Landform: Tidal marshes

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf

Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

Pawcatuck, very frequently flooded

Percent of map unit: 5 percent

Landform: Tidal marshes on barrier islands Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf

Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

WATER—Water

Map Unit Composition

Water, greater than 40 acres: 85 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

WHe1—Herring Creek mucky silt loam, 0 to 1 meter water depth

Map Unit Setting

National map unit symbol: 2thtw

Elevation: 0 feet

Mean annual precipitation: 41 to 49 inches Mean annual air temperature: 53 to 60 degrees F

Frost-free period: 365 days

Farmland classification: Not prime farmland

Map Unit Composition

Herring creek, 0 to 1 meter water depth, and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Herring Creek, 0 To 1 Meter Water Depth

Setting

Landform: Estuarine tidal streams

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf

Down-slope shape: Concave Across-slope shape: Linear

Parent material: Mainland cove fine-silty estuarine deposits over woody organic

material

Typical profile

Aseg - 0 to 3 inches: mucky silt loam Cseg - 3 to 24 inches: silt loam

Oeseb1 - 24 to 51 inches: mucky peat Oeseb2 - 51 to 69 inches: mucky peat

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Subaqueous

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to

high (0.20 to 1.98 in/hr)

Depth to water table: About 0 inches Frequency of flooding: Very frequent

Frequency of ponding: None

Calcium carbonate, maximum in profile: 10 percent

Salinity, maximum in profile: Strongly saline (16.0 to 35.0 mmhos/cm)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydrologic Soil Group: D Hydric soil rating: Yes

Minor Components

Metedeconk, 0 to 1 meter water depth

Percent of map unit: 10 percent Landform: Estuarine tidal streams

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf

Down-slope shape: Concave Across-slope shape: Linear Hydric soil rating: Yes

Truitt, 0 to 1 meter water depth

Percent of map unit: 5 percent Landform: Mainland coves

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf

Down-slope shape: Concave Across-slope shape: Concave

Hydric soil rating: Yes

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Land Classifications

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Hydric Rating by Map Unit

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

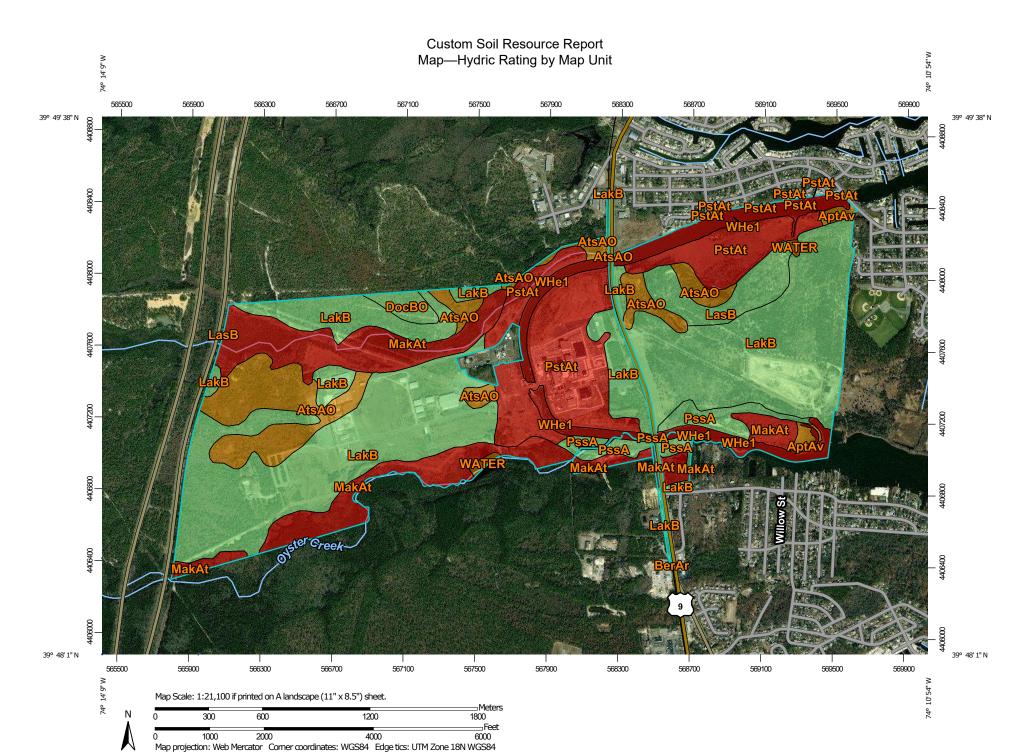
Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.



MAP LEGEND

Transportation

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Background

Rails

US Routes

Major Roads

Local Roads

Interstate Highways

Aerial Photography

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

Hydric (100%)

Hydric (66 to 99%)

Hydric (33 to 65%)

Hydric (1 to 32%)

Not Hydric (0%)

Not rated or not available

Soil Rating Lines

Hydric (100%)

Hydric (66 to 99%)

Hydric (33 to 65%)

Hydric (1 to 32%)

Not Hydric (0%)

Not rated or not available

Soil Rating Points

Hydric (100%)

Hydric (66 to 99%)

Hydric (33 to 65%)

Hydric (1 to 32%)

Not Hydric (0%)

Not rated or not available

Water Features

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Streams and Canals

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Ocean County, New Jersey Survey Area Data: Version 17, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Sep 16, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
AptAv	Appoquinimink- Transquaking- Mispillion complex, 0 to 1 percent slopes, very frequently flooded	95	7.1	0.6%
AtsAO	Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area	95	110.7	9.9%
BerAr	Berryland sand, 0 to 2 percent slopes, rarely flooded	100	0.0	0.0%
DocBO	Downer loamy sand, 0 to 5 percent slopes, Northern Tidewater Area	5	10.9	1.0%
LakB	Lakehurst sand, 0 to 5 percent slopes	10	501.5	45.0%
LasB	Lakewood sand, 0 to 5 percent slopes	5	38.7	3.5%
MakAt	Manahawkin muck, 0 to 2 percent slopes, frequently flooded	100	166.5	14.9%
PssA	Psamments, 0 to 2 percent slopes	15	33.4	3.0%
PstAt	Psammaquents, sulfidic substratum, 0 to 2 percent slopes, frequently flooded	100	172.4	15.5%
WATER	Water	85	3.3	0.3%
WHe1	Herring Creek mucky silt loam, 0 to 1 meter water depth	100	71.0	6.4%
Totals for Area of Inter	est	1,115.7	100.0%	

Rating Options—Hydric Rating by Map Unit

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Physical Properties

Soil Physical Properties are measured or inferred from direct observations in the field or laboratory. Examples of soil physical properties include percent clay, organic matter, saturated hydraulic conductivity, available water capacity, and bulk density.

Organic Matter

Organic matter is the plant and animal residue in the soil at various stages of decomposition. The estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms. An irregular distribution of organic carbon with depth may indicate different episodes of soil deposition or soil formation. Soils that are very high in organic matter have poor engineering properties and subside upon drying.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Custom Soil Resource Report Map—Organic Matter 39° 49' 38" N PSTAT LakB LakB 39° 48′ 1″ N Map Scale: 1:21,100 if printed on A landscape (11" \times 8.5") sheet.

Meters

Feet

Map projection: Web Mercator Comer coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Transportation

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Background

Rails

US Routes

Major Roads

Local Roads

Interstate Highways

Aerial Photography

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

<= 0.74

> 0.74 and <= 3.78

> 3.78 and <= 15.59

> 15.59 and <= 40.81

> 40.81 and <= 51.58

Not rated or not available

Soil Rating Lines

<= 0.74

> 0.74 and <= 3.78

> 3.78 and <= 15.59

> 15.59 and <= 40.81

> 40.81 and <= 51.58

Not rated or not available

Soil Rating Points

<= 0.74

> 0.74 and <= 3.78

> 3.78 and <= 15.59

> 15.59 and <= 40.81

> 40.81 and <= 51.58

Not rated or not available

Water Features

Streams and Canals

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Ocean County, New Jersey Survey Area Data: Version 17, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Sep 16, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Organic Matter

Map unit symbol	Map unit name	Rating (percent)	Acres in AOI	Percent of AOI
AptAv	Appoquinimink- Transquaking- Mispillion complex, 0 to 1 percent slopes, very frequently flooded	39.15	7.1	0.6%
AtsAO	Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area	3.78	110.7	9.9%
BerAr	Berryland sand, 0 to 2 percent slopes, rarely flooded	0.74	0.0	0.0%
DocBO	Downer loamy sand, 0 to 5 percent slopes, Northern Tidewater Area	0.30	10.9	1.0%
LakB	Lakehurst sand, 0 to 5 percent slopes	3.63	501.5	45.0%
LasB	Lakewood sand, 0 to 5 percent slopes	0.12	38.7	3.5%
MakAt	Manahawkin muck, 0 to 2 percent slopes, frequently flooded	51.58	166.5	14.9%
PssA	Psamments, 0 to 2 percent slopes	0.00	33.4	3.0%
PstAt	Psammaquents, sulfidic substratum, 0 to 2 percent slopes, frequently flooded	15.59	172.4	15.5%
WATER	Water		3.3	0.3%
WHe1	Herring Creek mucky silt loam, 0 to 1 meter water depth	40.81	71.0	6.4%
Totals for Area of Inter	est	1,115.7	100.0%	

Rating Options—Organic Matter

Units of Measure: percent

Aggregation Method: Dominant Component Component Percent Cutoff: None Specified

Tie-break Rule: Higher Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): Depth Range (Weighted Average)

Top Depth: 0

Bottom Depth: 50

Units of Measure: Inches

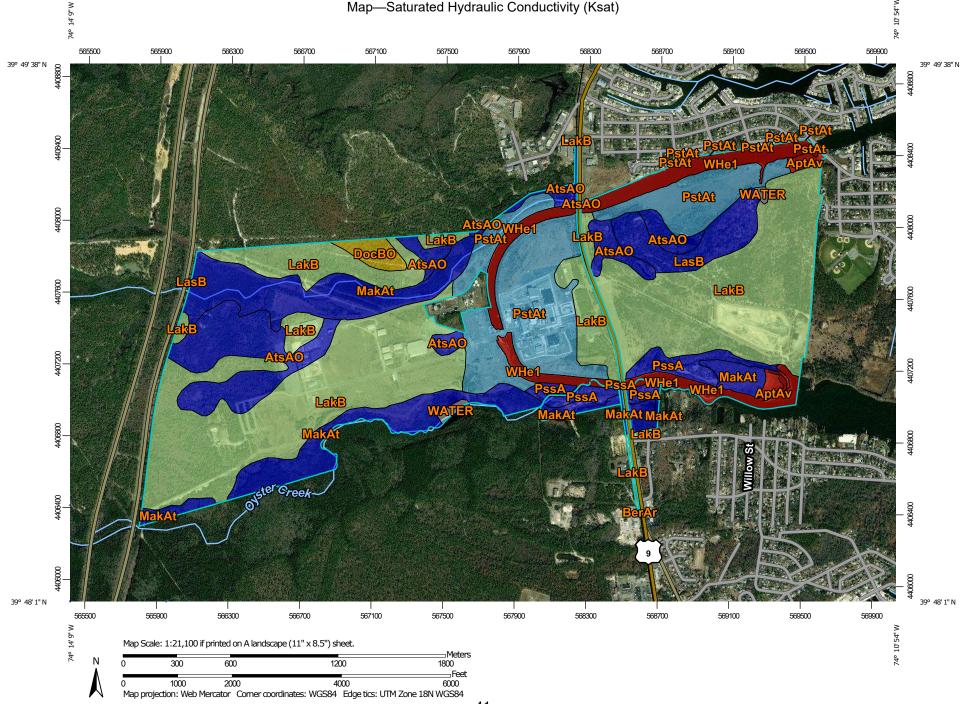
Saturated Hydraulic Conductivity (Ksat)

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity is considered in the design of soil drainage systems and septic tank absorption fields.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

The numeric Ksat values have been grouped according to standard Ksat class limits

Custom Soil Resource Report Map—Saturated Hydraulic Conductivity (Ksat)



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

<= 16.4724

> 16.4724 and <= 69.3490

> 69.3490 and <= 82.7510

> 82.7510 and <= 86.3400

> 86.3400 and <= 91.7502

Not rated or not available

Soil Rating Lines

<= 16.4724

> 16.4724 and <= 69.3490

> 69.3490 and <= 82.7510

> 82.7510 and <= 86.3400

> 86.3400 and <= 91.7502

Not rated or not available

Soil Rating Points

<= 16.4724

> 16.4724 and <= 69.3490

> 69.3490 and <= 82.7510

> 82.7510 and <= 86.3400

> 86.3400 and <= 91.7502

Not rated or not available

Water Features

Transportation

→ Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Ocean County, New Jersey Survey Area Data: Version 17, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Sep 16, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

MAP LEGEND

MAP INFORMATION



Streams and Canals

Table—Saturated Hydraulic Conductivity (Ksat)

Map unit symbol	Map unit name	Rating (micrometers per second)	Acres in AOI	Percent of AOI
AptAv	Appoquinimink- Transquaking- Mispillion complex, 0 to 1 percent slopes, very frequently flooded	15.8879	7.1	0.6%
AtsAO	Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area	91.7502	110.7	9.9%
BerAr	Berryland sand, 0 to 2 percent slopes, rarely flooded	80.1574	0.0	0.0%
DocBO	Downer loamy sand, 0 to 5 percent slopes, Northern Tidewater Area	69.3490	10.9	1.0%
LakB	Lakehurst sand, 0 to 5 percent slopes	82.7510	501.5	45.0%
LasB	Lakewood sand, 0 to 5 percent slopes	90.0735	38.7	3.5%
MakAt	Manahawkin muck, 0 to 2 percent slopes, frequently flooded	90.8512	166.5	14.9%
PssA	Psamments, 0 to 2 percent slopes	91.7400	33.4	3.0%
PstAt	Psammaquents, sulfidic substratum, 0 to 2 percent slopes, frequently flooded	86.3400	172.4	15.5%
WATER	Water		3.3	0.3%
WHe1	Herring Creek mucky silt loam, 0 to 1 meter water depth	16.4724	71.0	6.4%
Totals for Area of Inter	rest		1,115.7	100.0%

Rating Options—Saturated Hydraulic Conductivity (Ksat)

Units of Measure: micrometers per second
Aggregation Method: Dominant Component
Component Percent Cutoff: None Specified

Tie-break Rule: Fastest Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): Depth Range (Weighted Average)

Top Depth: 0

Custom Soil Resource Report

Bottom Depth: 50

Units of Measure: Inches

Surface Texture

This displays the representative texture class and modifier of the surface horizon.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."

Custom Soil Resource Report Map—Surface Texture 39° 49' 38" N **PstAt** LakB 39° 48′ 1″ N

Map Scale: 1:21,100 if printed on A landscape (11" \times 8.5") sheet.

MAP LEGEND

Coarse sand

Loamy sand

Mucky peat

Mucky silt loam

Slightly decomposed

Streams and Canals

Interstate Highways

Not rated or not available

plant material

Muck

Peat

Sand

Rails

US Routes

Maior Roads

Local Roads

Aerial Photography

Water Features

Transportation

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Background

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- Coarse sand
- Loamy sand
- Muck
- Mucky peat
- Mucky silt loam
- Peat
- Sand
- Slightly decomposed plant material
- Not rated or not available

Soil Rating Lines

- Coarse sand
- Loamy sand
- Muck
- Mucky peat
- Mucky silt loam
- Peat
- Sand
- Slightly decomposed plant material
- Not rated or not available

Soil Rating Points

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Ocean County, New Jersey Survey Area Data: Version 17, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Sep 16, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Surface Texture

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
AptAv	Appoquinimink- Transquaking- Mispillion complex, 0 to 1 percent slopes, very frequently flooded	Mucky peat	7.1	0.6%
AtsAO	Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area	Peat	110.7	9.9%
BerAr	Berryland sand, 0 to 2 percent slopes, rarely flooded	Sand	0.0	0.0%
DocBO	Downer loamy sand, 0 to 5 percent slopes, Northern Tidewater Area	Loamy sand	10.9	1.0%
LakB	Lakehurst sand, 0 to 5 percent slopes	Slightly decomposed plant material	501.5	45.0%
LasB	Lakewood sand, 0 to 5 percent slopes	Sand	38.7	3.5%
MakAt	Manahawkin muck, 0 to 2 percent slopes, frequently flooded	Muck	166.5	14.9%
PssA	Psamments, 0 to 2 percent slopes	Coarse sand	33.4	3.0%
PstAt	Psammaquents, sulfidic substratum, 0 to 2 percent slopes, frequently flooded	Coarse sand	172.4	15.5%
WATER	Water		3.3	0.3%
WHe1	Herring Creek mucky silt loam, 0 to 1 meter water depth	Mucky silt loam	71.0	6.4%
Totals for Area of Interest			1,115.7	100.0%

Rating Options—Surface Texture

Aggregation Method: Dominant Condition
Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

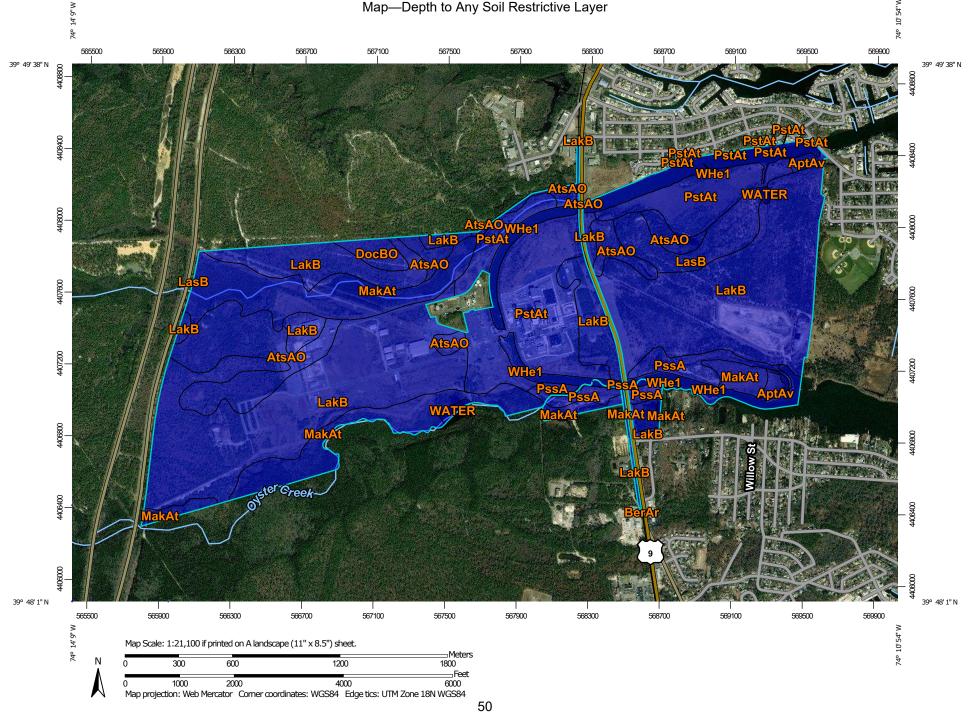
Depth to Any Soil Restrictive Layer

A "restrictive layer" is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers.

This theme presents the depth to any type of restrictive layer that is described for each map unit. If more than one type of restrictive layer is described for an individual soil type, the depth to the shallowest one is presented. If no restrictive layer is described in a map unit, it is represented by the "> 200" depth class.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Custom Soil Resource Report Map—Depth to Any Soil Restrictive Layer



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

> 200

Not rated or not available

Not rated or not available

Water Features

Streams and Canals

Transportation

HH Rai

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

Soil Rating Lines

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

> 200

Not rated or not available

Soil Rating Points

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

> 200

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Ocean County, New Jersey Survey Area Data: Version 17, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Sep 16, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Depth to Any Soil Restrictive Layer

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
AptAv	Appoquinimink- Transquaking- Mispillion complex, 0 to 1 percent slopes, very frequently flooded	>200	7.1	0.6%
AtsAO	Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area	>200	110.7	9.9%
BerAr	Berryland sand, 0 to 2 percent slopes, rarely flooded	>200	0.0	0.0%
DocBO	Downer loamy sand, 0 to 5 percent slopes, Northern Tidewater Area	>200	10.9	1.0%
LakB	Lakehurst sand, 0 to 5 percent slopes	>200	501.5	45.0%
LasB	Lakewood sand, 0 to 5 percent slopes	>200	38.7	3.5%
MakAt	Manahawkin muck, 0 to 2 percent slopes, frequently flooded	>200	166.5	14.9%
PssA	Psamments, 0 to 2 percent slopes	>200	33.4	3.0%
PstAt	Psammaquents, sulfidic substratum, 0 to 2 percent slopes, frequently flooded	>200	172.4	15.5%
WATER	Water	>200	3.3	0.3%
WHe1	Herring Creek mucky silt loam, 0 to 1 meter water depth	>200	71.0	6.4%
Totals for Area of Interest			1,115.7	100.0%

Rating Options—Depth to Any Soil Restrictive Layer

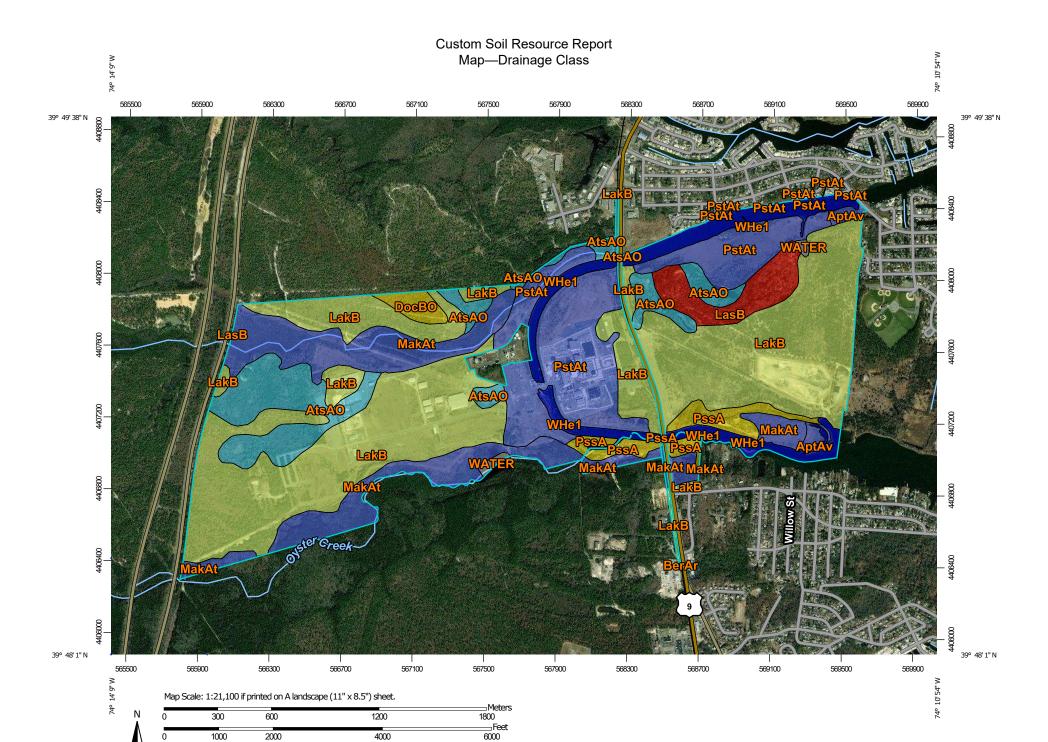
Units of Measure: centimeters

Aggregation Method: Dominant Component Component Percent Cutoff: None Specified

Tie-break Rule: Lower Interpret Nulls as Zero: No

Drainage Class

"Drainage class (natural)" refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized-excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the "Soil Survey Manual."



Map projection: Web Mercator Comer coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

Excessively drained

drained

Water Features

Transportation

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Background

Rails

US Routes

Maior Roads

Local Roads

Well drained

Poorly drained

Subaqueous

Very poorly drained

Somewhat excessively

Moderately well drained

Somewhat poorly drained

Not rated or not available

Streams and Canals

Interstate Highways

Aerial Photography

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Soil Rating Lines

- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Soil Rating Points

The soil surveys that comprise your AOI were mapped at 1:24,000.

MAP INFORMATION

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Ocean County, New Jersey Survey Area Data: Version 17, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Sep 16, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Drainage Class

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
AptAv	Appoquinimink- Transquaking- Mispillion complex, 0 to 1 percent slopes, very frequently flooded	Very poorly drained	7.1	0.6%
AtsAO	Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area	Poorly drained	110.7	9.9%
BerAr	Berryland sand, 0 to 2 percent slopes, rarely flooded	Very poorly drained	0.0	0.0%
DocBO	Downer loamy sand, 0 to 5 percent slopes, Northern Tidewater Area	Well drained	10.9	1.0%
LakB	Lakehurst sand, 0 to 5 percent slopes	Moderately well drained	501.5	45.0%
LasB	Lakewood sand, 0 to 5 percent slopes	Excessively drained	38.7	3.5%
MakAt	Manahawkin muck, 0 to 2 percent slopes, frequently flooded	Very poorly drained	166.5	14.9%
PssA	Psamments, 0 to 2 percent slopes	Well drained	33.4	3.0%
PstAt	Psammaquents, sulfidic substratum, 0 to 2 percent slopes, frequently flooded	Very poorly drained	172.4	15.5%
WATER	Water		3.3	0.3%
WHe1	Herring Creek mucky silt loam, 0 to 1 meter water depth	Subaqueous	71.0	6.4%
Totals for Area of Interest			1,115.7	100.0%

Rating Options—Drainage Class

Aggregation Method: Dominant Condition
Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the

Custom Soil Resource Report

soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

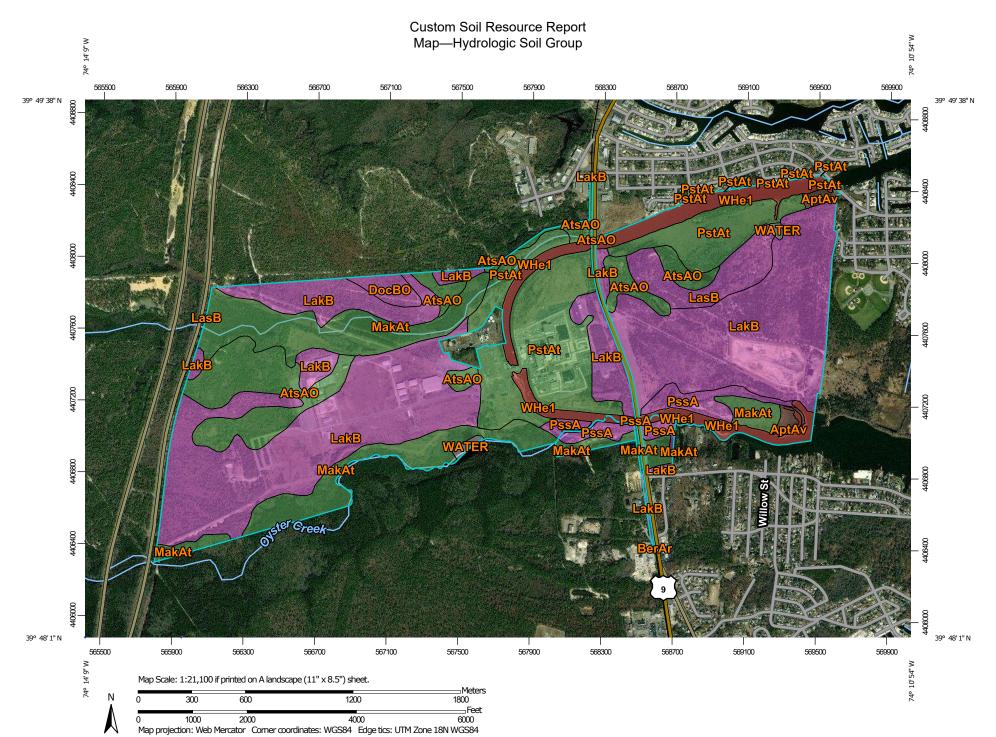
Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.



MAP LEGEND MAP INFORMATION Area of Interest (AOI) The soil surveys that comprise your AOI were mapped at С 1:24.000. Area of Interest (AOI) C/D Soils Please rely on the bar scale on each map sheet for map D Soil Rating Polygons measurements. Not rated or not available Α Source of Map: Natural Resources Conservation Service **Water Features** A/D Web Soil Survey URL: Streams and Canals В Coordinate System: Web Mercator (EPSG:3857) Transportation B/D Rails ---Maps from the Web Soil Survey are based on the Web Mercator С projection, which preserves direction and shape but distorts Interstate Highways distance and area. A projection that preserves area, such as the C/D **US Routes** Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required. D Major Roads ~ Not rated or not available Local Roads -This product is generated from the USDA-NRCS certified data as of the version date(s) listed below. Soil Rating Lines Background Aerial Photography Soil Survey Area: Ocean County, New Jersey Survey Area Data: Version 17, Sep 16, 2019 Soil map units are labeled (as space allows) for map scales 1:50,000 or larger. Date(s) aerial images were photographed: Dec 31, 2009—Sep 16, 2017 The orthophoto or other base map on which the soil lines were Not rated or not available compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor **Soil Rating Points** shifting of map unit boundaries may be evident. Α A/D B/D

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
AptAv	Appoquinimink- Transquaking- Mispillion complex, 0 to 1 percent slopes, very frequently flooded	B/D	7.1	0.6%
AtsAO	Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area	A/D	110.7	9.9%
BerAr	Berryland sand, 0 to 2 percent slopes, rarely flooded	A/D	0.0	0.0%
DocBO	Downer loamy sand, 0 to 5 percent slopes, Northern Tidewater Area	A	10.9	1.0%
LakB	Lakehurst sand, 0 to 5 percent slopes	А	501.5	45.0%
LasB	Lakewood sand, 0 to 5 percent slopes	А	38.7	3.5%
MakAt	Manahawkin muck, 0 to 2 percent slopes, frequently flooded	A/D	166.5	14.9%
PssA	Psamments, 0 to 2 percent slopes	А	33.4	3.0%
PstAt	Psammaquents, sulfidic substratum, 0 to 2 percent slopes, frequently flooded	A/D	172.4	15.5%
WATER	Water		3.3	0.3%
WHe1	Herring Creek mucky silt loam, 0 to 1 meter water depth	D	71.0	6.4%
Totals for Area of Interest			1,115.7	100.0%

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition
Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Water Features

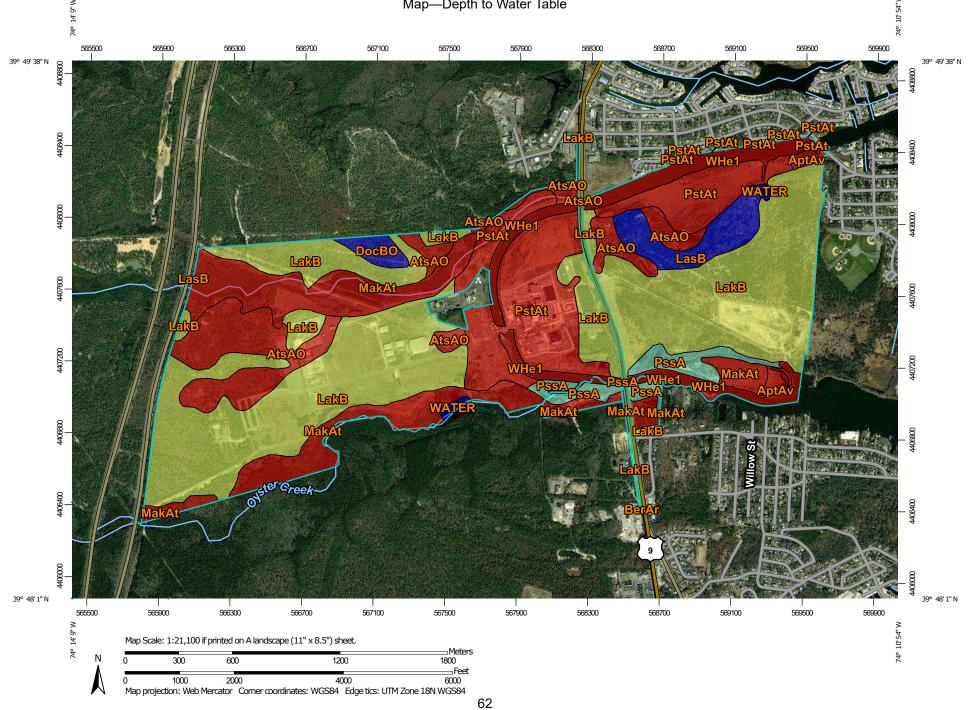
Water Features include ponding frequency, flooding frequency, and depth to water table.

Depth to Water Table

"Water table" refers to a saturated zone in the soil. It occurs during specified months. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Custom Soil Resource Report Map—Depth to Water Table



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

> 200

Not rated or not available

Not rated or not available

Water Features

Streams and Canals

Transportation

+++ Rai

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

Soil Rating Lines

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

> 200

Not rated or not available

Soil Rating Points

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

> 200

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Ocean County, New Jersey Survey Area Data: Version 17, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Sep 16, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Custom Soil Resource Report

Table—Depth to Water Table

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
AptAv	Appoquinimink- Transquaking- Mispillion complex, 0 to 1 percent slopes, very frequently flooded	0	7.1	0.6%
AtsAO	Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area	5	110.7	9.9%
BerAr	Berryland sand, 0 to 2 percent slopes, rarely flooded	0	0.0	0.0%
DocBO	Downer loamy sand, 0 to 5 percent slopes, Northern Tidewater Area	>200	10.9	1.0%
LakB	Lakehurst sand, 0 to 5 percent slopes	76	501.5	45.0%
LasB	Lakewood sand, 0 to 5 percent slopes	>200	38.7	3.5%
MakAt	Manahawkin muck, 0 to 2 percent slopes, frequently flooded	0	166.5	14.9%
PssA	Psamments, 0 to 2 percent slopes	122	33.4	3.0%
PstAt	Psammaquents, sulfidic substratum, 0 to 2 percent slopes, frequently flooded	0	172.4	15.5%
WATER	Water	>200	3.3	0.3%
WHe1	Herring Creek mucky silt loam, 0 to 1 meter water depth	0	71.0	6.4%
Totals for Area of Interest			1,115.7	100.0%

Rating Options—Depth to Water Table

Units of Measure: centimeters

Aggregation Method: Dominant Component Component Percent Cutoff: None Specified

Tie-break Rule: Lower
Interpret Nulls as Zero: No
Beginning Month: January
Ending Month: December

Flooding Frequency Class

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent.

"None" means that flooding is not probable. The chance of flooding is nearly 0 percent in any year. Flooding occurs less than once in 500 years.

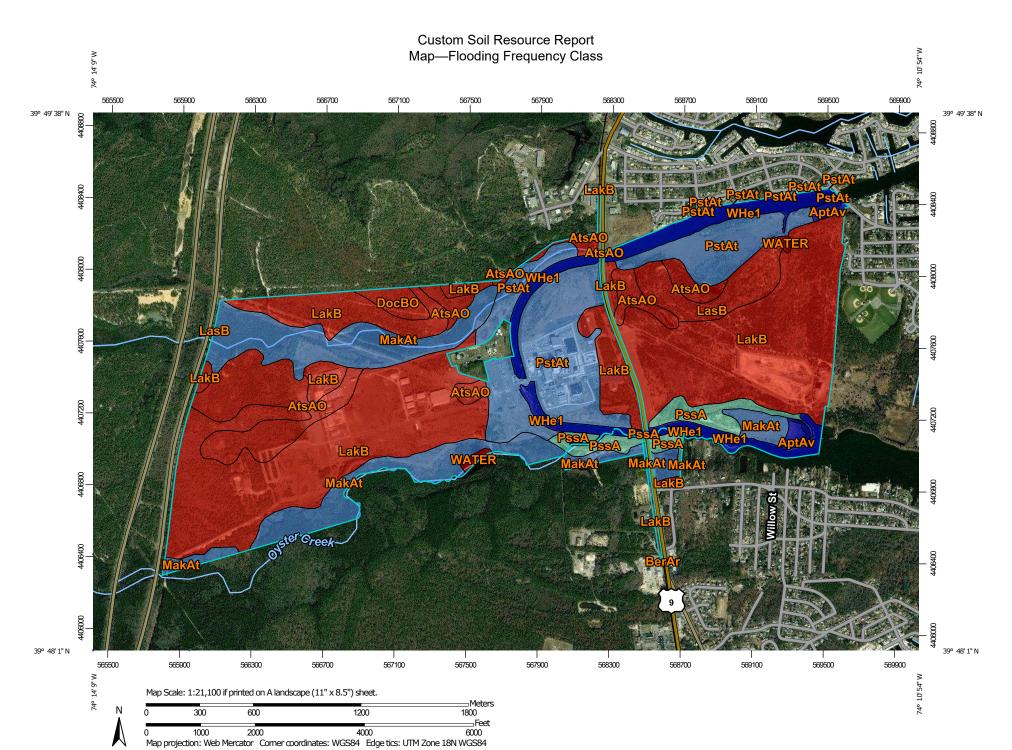
"Very rare" means that flooding is very unlikely but possible under extremely unusual weather conditions. The chance of flooding is less than 1 percent in any year.

"Rare" means that flooding is unlikely but possible under unusual weather conditions. The chance of flooding is 1 to 5 percent in any year.

"Occasional" means that flooding occurs infrequently under normal weather conditions. The chance of flooding is 5 to 50 percent in any year.

"Frequent" means that flooding is likely to occur often under normal weather conditions. The chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year.

"Very frequent" means that flooding is likely to occur very often under normal weather conditions. The chance of flooding is more than 50 percent in all months of any year.



MAP LEGEND MAP INFORMATION Area of Interest (AOI) The soil surveys that comprise your AOI were mapped at Not rated or not available 1:24.000. Area of Interest (AOI) **Water Features** Soils Streams and Canals Please rely on the bar scale on each map sheet for map Soil Rating Polygons measurements. Transportation None +++ Source of Map: Natural Resources Conservation Service Very Rare Interstate Highways Web Soil Survey URL: Rare Coordinate System: Web Mercator (EPSG:3857) **US Routes** Occasional Major Roads Maps from the Web Soil Survey are based on the Web Mercator Frequent projection, which preserves direction and shape but distorts Local Roads distance and area. A projection that preserves area, such as the Very Frequent Albers equal-area conic projection, should be used if more Background accurate calculations of distance or area are required. Aerial Photography Not rated or not available Soil Rating Lines This product is generated from the USDA-NRCS certified data as None of the version date(s) listed below. Very Rare Soil Survey Area: Ocean County, New Jersey Rare Survey Area Data: Version 17, Sep 16, 2019 Occasional Soil map units are labeled (as space allows) for map scales Frequent 1:50,000 or larger. Very Frequent Date(s) aerial images were photographed: Dec 31, 2009—Sep Not rated or not available 16, 2017 **Soil Rating Points** None The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background Very Rare imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident. Rare Occasional Frequent Very Frequent

Table—Flooding Frequency Class

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
AptAv	Appoquinimink- Transquaking- Mispillion complex, 0 to 1 percent slopes, very frequently flooded	Very frequent	7.1	0.6%
AtsAO	Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area	None	110.7	9.9%
BerAr	Berryland sand, 0 to 2 percent slopes, rarely flooded	Rare	0.0	0.0%
DocBO	Downer loamy sand, 0 to 5 percent slopes, Northern Tidewater Area	None	10.9	1.0%
LakB	Lakehurst sand, 0 to 5 percent slopes	None	501.5	45.0%
LasB	Lakewood sand, 0 to 5 percent slopes	None	38.7	3.5%
MakAt	Manahawkin muck, 0 to 2 percent slopes, frequently flooded	Frequent	166.5	14.9%
PssA	Psamments, 0 to 2 percent slopes	Occasional	33.4	3.0%
PstAt	Psammaquents, sulfidic substratum, 0 to 2 percent slopes, frequently flooded	Frequent	172.4	15.5%
WATER	Water	None	3.3	0.3%
WHe1	Herring Creek mucky silt loam, 0 to 1 meter water depth	Very frequent	71.0	6.4%
Totals for Area of Interest			1,115.7	100.0%

Rating Options—Flooding Frequency Class

Aggregation Method: Dominant Condition
Component Percent Cutoff: None Specified

Tie-break Rule: More Frequent

Beginning Month: January
Ending Month: December

Ponding Frequency Class

Ponding is standing water in a closed depression. The water is removed only by deep percolation, transpiration, or evaporation or by a combination of these processes. Ponding frequency classes are based on the number of times that ponding occurs over a given period. Frequency is expressed as none, rare, occasional, and frequent.

"None" means that ponding is not probable. The chance of ponding is nearly 0 percent in any year.

"Rare" means that ponding is unlikely but possible under unusual weather conditions. The chance of ponding is nearly 0 percent to 5 percent in any year.

"Occasional" means that ponding occurs, on the average, once or less in 2 years. The chance of ponding is 5 to 50 percent in any year.

"Frequent" means that ponding occurs, on the average, more than once in 2 years. The chance of ponding is more than 50 percent in any year.

Custom Soil Resource Report Map—Ponding Frequency Class 74° 14'9"W 39° 49' 38" N WATER **PstAt DocBO** LakB LakB 39° 48′ 1″ N

Map Scale: 1:21,100 if printed on A landscape (11" \times 8.5") sheet.

MAP LEGEND MAP INFORMATION Area of Interest (AOI) **US Routes** The soil surveys that comprise your AOI were mapped at 1:24.000. Area of Interest (AOI) Major Roads Soils Please rely on the bar scale on each map sheet for map Local Roads \sim Soil Rating Polygons measurements. Background None Aerial Photography Source of Map: Natural Resources Conservation Service Rare Web Soil Survey URL: Occasional Coordinate System: Web Mercator (EPSG:3857) Frequent Maps from the Web Soil Survey are based on the Web Mercator Not rated or not available projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Soil Rating Lines Albers equal-area conic projection, should be used if more None accurate calculations of distance or area are required. Rare This product is generated from the USDA-NRCS certified data as Occasional of the version date(s) listed below. Frequent Soil Survey Area: Ocean County, New Jersey Not rated or not available Survey Area Data: Version 17, Sep 16, 2019 Soil Rating Points Soil map units are labeled (as space allows) for map scales None 1:50,000 or larger. Rare Occasional Date(s) aerial images were photographed: Dec 31, 2009—Sep 16, 2017 Frequent The orthophoto or other base map on which the soil lines were Not rated or not available compiled and digitized probably differs from the background Water Features imagery displayed on these maps. As a result, some minor Streams and Canals shifting of map unit boundaries may be evident. **Transportation** Rails

Interstate Highways

Table—Ponding Frequency Class

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
AptAv	Appoquinimink- Transquaking- Mispillion complex, 0 to 1 percent slopes, very frequently flooded	Frequent	7.1	0.6%
AtsAO	Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area	None	110.7	9.9%
BerAr	Berryland sand, 0 to 2 percent slopes, rarely flooded	Rare	0.0	0.0%
DocBO	Downer loamy sand, 0 to 5 percent slopes, Northern Tidewater Area	None	10.9	1.0%
LakB	Lakehurst sand, 0 to 5 percent slopes	None	501.5	45.0%
LasB	Lakewood sand, 0 to 5 percent slopes	None	38.7	3.5%
MakAt	Manahawkin muck, 0 to 2 percent slopes, frequently flooded	Frequent	166.5	14.9%
PssA	Psamments, 0 to 2 percent slopes	None	33.4	3.0%
PstAt	Psammaquents, sulfidic substratum, 0 to 2 percent slopes, frequently flooded	None	172.4	15.5%
WATER	Water	None	3.3	0.3%
WHe1	Herring Creek mucky silt loam, 0 to 1 meter water depth	None	71.0	6.4%
Totals for Area of Interest			1,115.7	100.0%

Rating Options—Ponding Frequency Class

Aggregation Method: Dominant Condition
Component Percent Cutoff: None Specified

Tie-break Rule: More Frequent

Beginning Month: January
Ending Month: December

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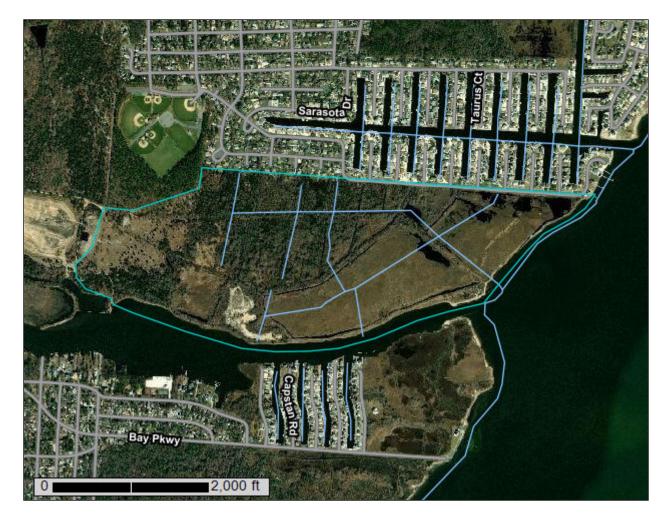
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NRCS

Natural Resources Conservation Service A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Ocean County, New Jersey



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2 053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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percent slopes, very frequently flooded	13
AtsAO—Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area	15
BerAr—Berryland sand, 0 to 2 percent slopes, rarely flooded	17
LakB—Lakehurst sand, 0 to 5 percent slopes	18
PssA—Psamments, 0 to 2 percent slopes	20
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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines



Soil Map Unit Points

Special Point Features

(o)

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole Slide or Slip

Sodic Spot

Spoil Area



Stony Spot

Very Stony Spot

Ŷ

Wet Spot Other

Δ

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

00

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Ocean County, New Jersey Survey Area Data: Version 16, Sep 13, 2018

Soil map units are labeled (as space allows) for map scales 1:50.000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Sep 16. 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AptAv	Appoquinimink-Transquaking- Mispillion complex, 0 to 1 percent slopes, very frequently flooded	61.3	25.5%
AtsAO Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area		62.0	25.8%
BerAr Berryland sand, 0 to 2 percent slopes, rarely flooded		61.2	25.4%
LakB	Lakehurst sand, 0 to 5 percent slopes	38.5	16.0%
PssA Psamments, 0 to 2 percent slopes		1.0	0.4%
WHe1 Herring Creek mucky silt loam, 0 to 1 meter water depth		14.0	5.8%
WPp1 Pasture Point loamy fine sand, 0 to 1 meter water depth		0.4	0.2%
WTs2	Truitt-Southpoint complex, 1 to 2 meter water depth	2.2	0.9%
Totals for Area of Interest		240.7	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They

generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Ocean County, New Jersey

AptAv—Appoquinimink-Transquaking-Mispillion complex, 0 to 1 percent slopes, very frequently flooded

Map Unit Setting

National map unit symbol: vk14

Elevation: 10 to 120 feet

Mean annual precipitation: 28 to 59 inches Mean annual air temperature: 46 to 79 degrees F

Frost-free period: 161 to 231 days

Farmland classification: Farmland of unique importance

Map Unit Composition

Appoquinimink, very frequently flooded, and similar soils: 40 percent Transquaking, very frequently flooded, and similar soils: 30 percent Mispillion, very frequently flooded, and similar soils: 25 percent

Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Appoquinimink, Very Frequently Flooded

Setting

Landform: Tidal marshes

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf

Down-slope shape: Linear Across-slope shape: Concave

Parent material: Loamy fluviomarine deposits over herbaceous organic material

Typical profile

Ag - 0 to 12 inches: mucky silt loam Cg - 12 to 30 inches: silt loam Oe - 30 to 80 inches: mucky peat

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to

high (0.20 to 2.00 in/hr)

Depth to water table: About 0 inches Frequency of flooding: Very frequent Frequency of ponding: Frequent

Salinity, maximum in profile: Strongly saline (16.0 to 32.0 mmhos/cm) Available water storage in profile: Very high (about 17.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8w

Hydrologic Soil Group: B/D Hydric soil rating: Yes

Description of Transquaking, Very Frequently Flooded

Setting

Landform: Tidal marshes

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Dip

Down-slope shape: Linear Across-slope shape: Linear

Parent material: Herbaceous organic material over loamy

Typical profile

Oe - 0 to 14 inches: mucky peat Oa - 14 to 60 inches: muck Cg - 60 to 90 inches: silty clay

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to

moderately high (0.06 to 0.20 in/hr) Depth to water table: About 0 inches Frequency of flooding: Very frequent Frequency of ponding: Frequent

Salinity, maximum in profile: Moderately saline to strongly saline (8.0 to 32.0

mmhos/cm)

Available water storage in profile: Very high (about 26.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8w

Hydrologic Soil Group: B/D Hydric soil rating: Yes

Description of Mispillion, Very Frequently Flooded

Setting

Landform: Tidal marshes

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf

Down-slope shape: Linear Across-slope shape: Concave

Parent material: Herbaceous organic material over loamy marine deposits and/or

loamy fluviomarine deposits

Typical profile

Oe - 0 to 10 inches: mucky peat Oa - 10 to 26 inches: muck Ca - 26 to 90 inches: silt loam

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20

to 0.60 in/hr)

Depth to water table: About 0 inches Frequency of flooding: Very frequent Frequency of ponding: Frequent

Salinity, maximum in profile: Moderately saline to strongly saline (8.0 to 16.0

mmhos/cm)

Available water storage in profile: Very high (about 15.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8w

Hydrologic Soil Group: C/D Hydric soil rating: Yes

Minor Components

Hammonton

Percent of map unit: 5 percent Landform: Depressions, flats

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope

Down-slope shape: Concave, linear Across-slope shape: Concave, linear

Hydric soil rating: No

AtsAO—Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area

Map Unit Setting

National map unit symbol: 2thvz

Elevation: 0 to 230 feet

Mean annual precipitation: 41 to 50 inches Mean annual air temperature: 46 to 66 degrees F

Frost-free period: 190 to 260 days

Farmland classification: Farmland of unique importance

Map Unit Composition

Atsion and similar soils: 90 percent Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Atsion

Setting

Landform: Drainageways, depressions, deflation flats, flats Landform position (two-dimensional): Footslope, toeslope

Landform position (three-dimensional): Dip, talf

Down-slope shape: Concave, linear

Across-slope shape: Linear, concave

Parent material: Sandy eolian deposits and/or fluviomarine deposits

Typical profile

Oi - 0 to 2 inches: peat A - 2 to 4 inches: sand E - 4 to 26 inches: sand Bhs - 26 to 34 inches: sand Cg - 34 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to

very high (0.71 to 19.98 in/hr)

Depth to water table: About 0 to 12 inches

Frequency of flooding: None Frequency of ponding: None

Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm) Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: A/D Hydric soil rating: Yes

Minor Components

Berryland, occasionally flooded

Percent of map unit: 5 percent

Landform: Flats, depressions, drainageways, deflation flats

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf, dip

Down-slope shape: Linear, concave Across-slope shape: Linear, concave

Hydric soil rating: Yes

Lakehurst

Percent of map unit: 5 percent Landform: Flats, low hills

Landform position (two-dimensional): Summit. footslope

Landform position (three-dimensional): Talf, rise

Down-slope shape: Linear

Across-slope shape: Linear, convex

Hydric soil rating: No

BerAr—Berryland sand, 0 to 2 percent slopes, rarely flooded

Map Unit Setting

National map unit symbol: rdtc

Elevation: 0 to 140 feet

Mean annual precipitation: 28 to 59 inches Mean annual air temperature: 46 to 79 degrees F

Frost-free period: 161 to 231 days

Farmland classification: Farmland of unique importance

Map Unit Composition

Berryland, rarely flooded, and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Berryland, Rarely Flooded

Setting

Landform: Depressions, drainageways, flats Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Base slope, dip

Down-slope shape: Concave, linear Across-slope shape: Concave, linear

Parent material: Sandy fluviomarine deposits

Typical profile

Ag - 0 to 11 inches: sand Bh - 11 to 19 inches: sand Bg - 19 to 32 inches: sand B'h - 32 to 40 inches: sand Cg1 - 40 to 44 inches: sand

Cg2 - 44 to 80 inches: stratified sand to sandy loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00

to 20.00 in/hr)

Depth to water table: About 0 to 6 inches

Frequency of flooding: Rare Frequency of ponding: Rare

Available water storage in profile: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: A/D Hydric soil rating: Yes

Minor Components

Atsion

Percent of map unit: 5 percent

Landform: Flats

Landform position (two-dimensional): Footslope Landform position (three-dimensional): Talf, dip

Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

Mullica, rarely flooded

Percent of map unit: 5 percent

Landform: Flood plains, depressions, drainageways Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope

Down-slope shape: Linear, concave Across-slope shape: Linear, concave

Hydric soil rating: Yes

Manahawkin, frequently flooded

Percent of map unit: 5 percent Landform: Swamps, flood plains Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

LakB—Lakehurst sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: rdtz Elevation: 20 to 150 feet

Mean annual precipitation: 28 to 59 inches
Mean annual air temperature: 46 to 79 degrees F

Frost-free period: 161 to 231 days

Farmland classification: Farmland of local importance

Map Unit Composition

Lakehurst and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lakehurst

Setting

Landform: Flats, dunes

Down-slope shape: Linear, convex Across-slope shape: Linear, convex

Parent material: Sandy fluviomarine deposits

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material

A - 2 to 4 inches: sand E - 4 to 18 inches: sand Bh - 18 to 32 inches: sand BC - 32 to 45 inches: sand C - 45 to 54 inches: sand Cq - 54 to 80 inches: sand

Properties and qualities

Slope: 0 to 5 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Moderately well drained

Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00

to 19.98 in/hr)

Depth to water table: About 18 to 42 inches

Frequency of flooding: None Frequency of ponding: None

Available water storage in profile: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4w

Hydrologic Soil Group: A Hydric soil rating: No

Minor Components

Berryland, rarely flooded

Percent of map unit: 5 percent

Landform: Depressions, drainageways, flats Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope

Down-slope shape: Concave, linear Across-slope shape: Concave, linear

Hydric soil rating: Yes

Quakerbridge

Percent of map unit: 5 percent

Landform: Knolls, flats

Landform position (three-dimensional): Interfluve

Down-slope shape: Convex, linear

Across-slope shape: Linear Hydric soil rating: No

Atsion, rarely flooded

Percent of map unit: 5 percent Landform: Flats, depressions

Landform position (two-dimensional): Toeslope, footslope Landform position (three-dimensional): Base slope, dip, talf

Down-slope shape: Linear, concave Across-slope shape: Linear, concave

Hydric soil rating: Yes

PssA—Psamments, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2xhpd

Elevation: 0 to 230 feet

Mean annual precipitation: 41 to 50 inches Mean annual air temperature: 46 to 58 degrees F

Frost-free period: 190 to 260 days

Farmland classification: Not prime farmland

Map Unit Composition

Psamments, nearly level, and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Psamments, Nearly Level

Setting

Landform: Flats

Landform position (two-dimensional): Footslope Landform position (three-dimensional): Talf

Down-slope shape: Linear Across-slope shape: Linear

Parent material: Sandy human-transported material

Typical profile

^A - 0 to 12 inches: coarse sand

^C1 - 12 to 36 inches: gravelly coarse sand

^C2 - 36 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00

to 20.00 in/hr)

Depth to water table: About 48 inches Frequency of flooding: Occasional Frequency of ponding: None

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0

mmhos/cm)

Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: A Hydric soil rating: No

Minor Components

Berryland, rarely flooded

Percent of map unit: 5 percent

Landform: Depressions on flats, drainageways on flats, deflation flats on flats

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Dip, talf

Down-slope shape: Concave, linear Across-slope shape: Concave, linear

Hydric soil rating: Yes

Mullica

Percent of map unit: 5 percent

Landform: Depressions on flats, swales on flats, drainageways on flats

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Dip, talf

Down-slope shape: Concave, linear Across-slope shape: Concave, linear

Hydric soil rating: Yes

Atsion

Percent of map unit: 5 percent

Landform: Deflation flats on flats, depressions on flats, drainageways on flats

Landform position (two-dimensional): Toeslope, footslope

Landform position (three-dimensional): Talf, dip

Down-slope shape: Linear, concave Across-slope shape: Linear, concave

Hydric soil rating: Yes

WHe1—Herring Creek mucky silt loam, 0 to 1 meter water depth

Map Unit Setting

National map unit symbol: 2thtw

Elevation: 0 feet

Mean annual precipitation: 41 to 49 inches Mean annual air temperature: 53 to 60 degrees F

Frost-free period: 365 days

Farmland classification: Not prime farmland

Map Unit Composition

Herring creek, 0 to 1 meter water depth, and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Herring Creek, 0 To 1 Meter Water Depth

Setting

Landform: Estuarine tidal streams

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf

Down-slope shape: Concave Across-slope shape: Linear

Parent material: Mainland cove fine-silty estuarine deposits over woody organic

materia

Typical profile

Aseg - 0 to 3 inches: mucky silt loam Cseg - 3 to 24 inches: silt loam

Oeseb1 - 24 to 51 inches: mucky peat Oeseb2 - 51 to 69 inches: mucky peat

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Subaqueous

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to

high (0.20 to 1.98 in/hr)

Depth to water table: About 0 inches Frequency of flooding: Very frequent

Frequency of ponding: None

Calcium carbonate, maximum in profile: 10 percent

Salinity, maximum in profile: Strongly saline (16.0 to 35.0 mmhos/cm)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydrologic Soil Group: D Hydric soil rating: Yes

Minor Components

Metedeconk, 0 to 1 meter water depth

Percent of map unit: 10 percent Landform: Estuarine tidal streams

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf

Down-slope shape: Concave Across-slope shape: Linear Hydric soil rating: Yes

Truitt, 0 to 1 meter water depth

Percent of map unit: 5 percent Landform: Mainland coves

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf

Down-slope shape: Concave Across-slope shape: Concave

Hydric soil rating: Yes

WPp1—Pasture Point loamy fine sand, 0 to 1 meter water depth

Map Unit Setting

National map unit symbol: 2thv8

Elevation: 0 feet

Mean annual precipitation: 41 to 49 inches Mean annual air temperature: 53 to 60 degrees F

Frost-free period: 365 days

Farmland classification: Not prime farmland

Map Unit Composition

Pasture point, 0 to 1 meter water depth, and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pasture Point, 0 To 1 Meter Water Depth

Setting

Landform: Submerged wave-cut platforms
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Talf

Down-slope shape: Linear Across-slope shape: Linear

Parent material: Submerged wave-cut platform coarse-loamy lagoonal deposits

over sandy fluviomarine deposits

Typical profile

A - 0 to 2 inches: loamy fine sand Cseg1 - 2 to 11 inches: loamy sand Cseg2 - 11 to 36 inches: fine sandy loam

2Cg - 36 to 78 inches: sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Subaqueous

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to

very high (0.57 to 14.17 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: Very frequent

Frequency of ponding: None

Calcium carbonate, maximum in profile: 5 percent

Salinity, maximum in profile: Strongly saline (16.0 to 35.0 mmhos/cm)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydrologic Soil Group: D Hydric soil rating: Yes

Minor Components

Truitt, 0 to 1 meter water depth

Percent of map unit: 10 percent Landform: Mainland coves

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf

Down-slope shape: Concave Across-slope shape: Concave

Hydric soil rating: Yes

Southpoint, 0 to 1 meter water depth

Percent of map unit: 5 percent Landform: Mainland coves

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf

Down-slope shape: Concave Across-slope shape: Concave

Hydric soil rating: Yes

WTs2—Truitt-Southpoint complex, 1 to 2 meter water depth

Map Unit Setting

National map unit symbol: 2thvl

Elevation: -10 to 0 feet

Mean annual precipitation: 41 to 49 inches Mean annual air temperature: 53 to 60 degrees F

Frost-free period: 365 days

Farmland classification: Not prime farmland

Map Unit Composition

Truitt, 1 to 2 meter water depth, and similar soils: 40 percent Southpoint, 1 to 2 meter water depth, and similar soils: 35 percent

Minor components: 25 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Truitt, 1 To 2 Meter Water Depth

Setting

Landform: Mainland coves

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf

Down-slope shape: Concave Across-slope shape: Concave

Parent material: Mainland cove fine-silty estuarine deposits

Typical profile

Aseg - 0 to 1 inches: silty clay loam Cseg - 1 to 77 inches: silty clay loam 2Oaseb - 77 to 88 inches: muck

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Subaqueous

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to

high (0.20 to 1.98 in/hr)

Depth to water table: About 0 inches Frequency of flooding: Very frequent

Frequency of ponding: None

Calcium carbonate, maximum in profile: 10 percent

Salinity, maximum in profile: Strongly saline (16.0 to 35.0 mmhos/cm)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydrologic Soil Group: D Hydric soil rating: Yes

Description of Southpoint, 1 To 2 Meter Water Depth

Setting

Landform: Mainland coves

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf

Down-slope shape: Concave Across-slope shape: Concave

Parent material: Mainland cove fine-silty estuarine deposits over herbaceous

organic material

Typical profile

Aseg - 0 to 1 inches: silty clay loam Cseg - 1 to 36 inches: silty clay loam Oeseb - 36 to 48 inches: mucky peat Oaseb - 48 to 69 inches: muck

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Subaqueous

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to

high (0.20 to 1.98 in/hr)

Depth to water table: About 0 inches Frequency of flooding: Very frequent

Frequency of ponding: None

Calcium carbonate, maximum in profile: 10 percent

Salinity, maximum in profile: Strongly saline (16.0 to 35.0 mmhos/cm)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydrologic Soil Group: D Hydric soil rating: Yes

Minor Components

Tumagan, 1 to 2 meter water depth

Percent of map unit: 15 percent

Landform: Submerged wave-cut platforms, mainland coves

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf

Down-slope shape: Linear, concave Across-slope shape: Linear, concave

Hydric soil rating: Yes

Pasture point, 1 to 2 meter water depth

Percent of map unit: 5 percent

Landform: Submerged wave-cut platforms
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Talf

Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

Tingles, 1 to 2 meter water depth

Percent of map unit: 5 percent

Landform: Lagoon channels, lagoon bottoms Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Dip, talf

Down-slope shape: Concave

Across-slope shape: Linear, concave

Hydric soil rating: Yes

References

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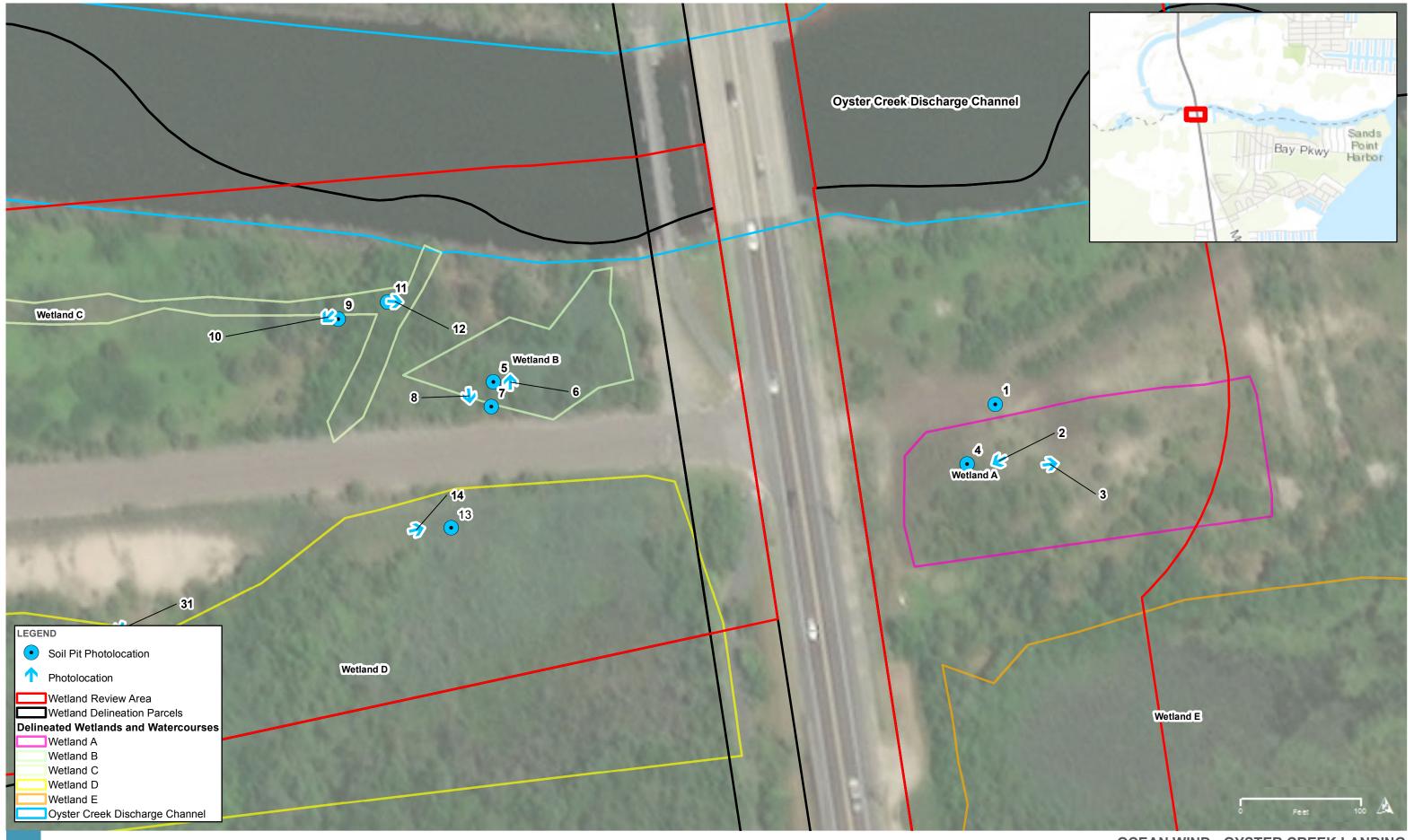
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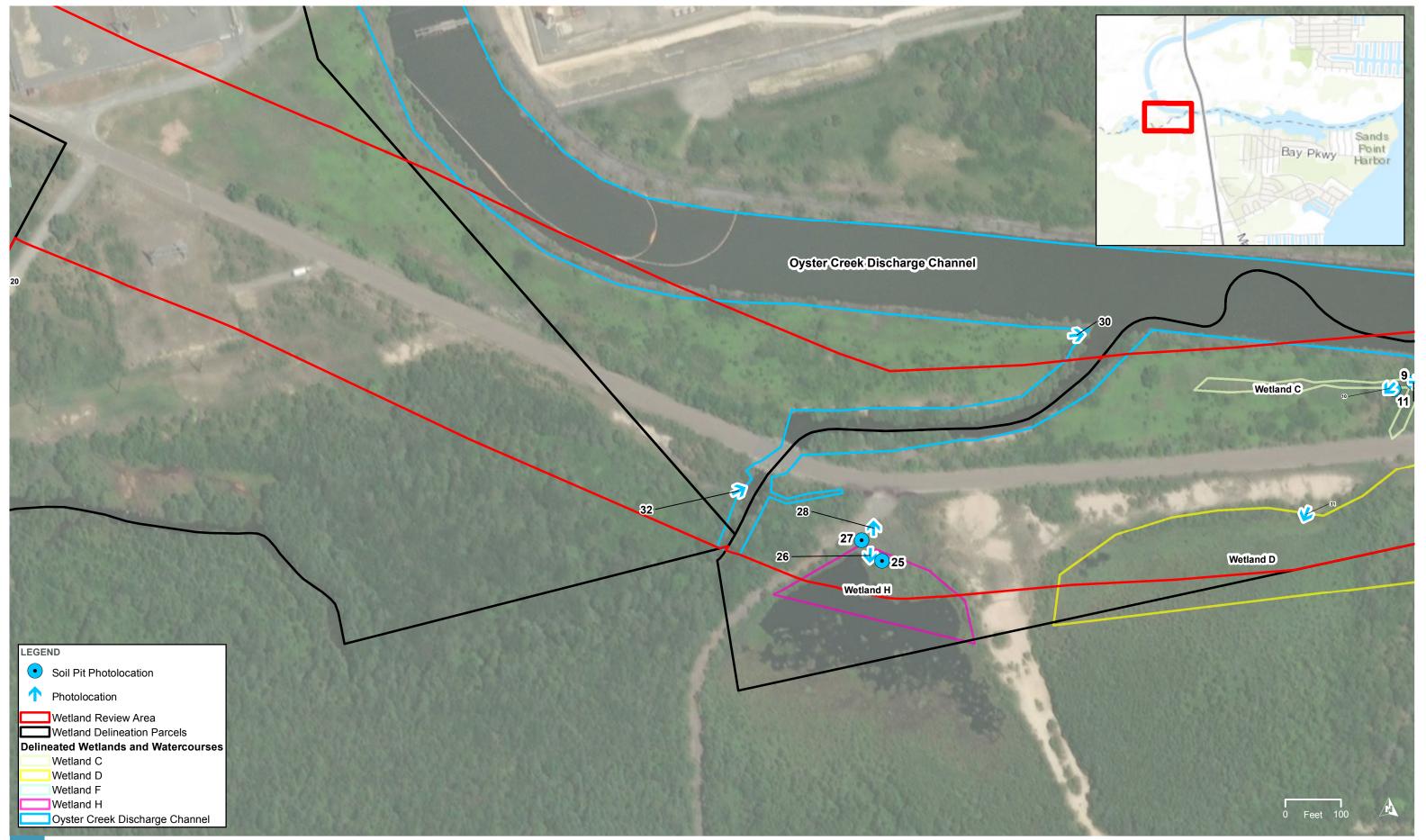
Attachment B. Site Photographs



HIR Orsted

OCEAN WIND - OYSTER CREEK LANDING
PHOTOLOCATION MAP

APPENDIX C



HIR Orsted

OCEAN WIND - OYSTER CREEK LANDING
PHOTOLOGATION MAP





OCEAN WIND - OYSTER CREEK LANDING
PHOTOLOCATION MAP
APPENDIX C



FDR Orsted

OCEAN WIND - OYSTER CREEK LANDING
PHOTOLOCATION MAP





Photo 2: Photo of Wetland A vegetation.

DATE:	05/08/20	PHOTO
CREATED BY:	JC	
REVIEWED BY:	DB	1 and 2
JOB NO:	10092078	



Photo 3: Photo of Wetland A vegetation facing east.



Photo 4: Photo of Wetland A soil profile.

DATE:	05/08/20	PHOTO
CREATED BY:	JC	
REVIEWED BY:	DB	3 and 4
JOB NO:	10092078	



Photo 5: Photo of Wetland B soil pit location.



Photo 6: Photo of Wetland B vegetation.

DATE:	05/08/20	PHOTO
CREATED BY:	JC	
REVIEWED BY:	DB	5 and 6
JOB NO:	10092078	



Photo 7: Photo of upland soil pit location outside of Wetland B.



Photo 8: Photo of upland vegetation outside of Wetland B.

		DATE:	05/08/20	PHOTO
Orsted Ocean Wind Project	Wetland Delineation - Oyster Creek	CREATED BY:	JC	
Orsied Ocean Wind Project	Photography	REVIEWED BY:	DB	7 and 8
	5 1 7	JOB NO:	10092078	



Photo 9: Photo of Wetland C upland soil profile.



Photo 10: Photo of Wetland C upland vegetation.

DATE:	05/08/20	PHOTO
CREATED BY:	JC	
REVIEWED BY:	DB	9 and 10
JOB NO:	10092078	



Photo 11: Photo of Wetland C soil pit location.



Photo 12: Photo of Wetland C vegetation.

DATE:	05/08/20	PHOTO
CREATED BY:	JC	
REVIEWED BY:	DB	11 and 12
JOB NO:	10092078	



Photo 13: Photo of Wetland D soil pit.



Photo 14: Photo of Wetland D on the south side of Discharge Drive.

DATE:	05/08/20	PHOTO	
CREATED BY:	JC		
REVIEWED BY:	DB	13 and 14	
JOB NO:	10092078		



Photo 15: Photo of Wetland E soil profile.



Photo 16: Photo of Wetland E vegetation.

DATE:	05/08/20	PHOTO
CREATED BY:	JC	
REVIEWED BY:	DB	15 and 16
JOB NO:	10092078	





Photo 18: Photo of vegetation outside of Wetland E.

DATE:	05/08/20	PHOTO
CREATED BY:	JC	
REVIEWED BY:	DB	17 and 18
JOB NO:	10092078	



Photo 19: Photo of Wetland F soil profile.



Photo 20: Photo of drainage basin at southern end of Wetland F.

Wetland Delineation - Oyster Creek Photography



Photo 21: Photo of Wetland G soil profile.



Photo 22: Photo of Wetland G1 vegetation.

DATE:	05/08/20	PHOTO
CREATED BY:	JC	
REVIEWED BY:	DB	21 and 22
JOB NO:	10092078	



Photo 23: Photo of Wetland G1 soil profile.



Photo 24: Photo of upland profile outside of Wetland G1.

Wetland Delineation - Oyster Creek Photography
 DATE:
 05/08/20
 PHOTO

 CREATED BY:
 JC

 REVIEWED BY:
 DB

 JOB NO:
 10092078

23 and 24



Photo 25: Photo of Wetland H soil profile.



Photo 26: Photo of Wetland H vegetation.

DATE:	05/08/20	PHOTO
CREATED BY:	JC	
REVIEWED BY:	DB	25 and 26
JOB NO:	10092078	



Photo 27: Photo of upland soil profoile outside of Wetland H.



Photo 28: Photo of vegetation outside of Wetland H.

DATE:	05/08/20	PHOTO
CREATED BY:	JC	
REVIEWED BY:	DB	27 and 28
JOB NO:	10092078	



Photo 29: Photo of box turtle in Wetland G during May 2020 site survey.

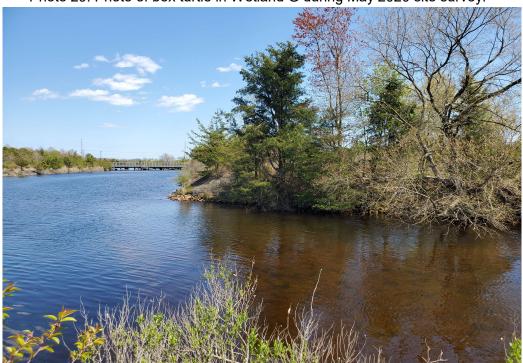


Photo 30: Photo of channel entrance connecting to Oyster Creek.

DATE:	05/08/20	PHOTO
CREATED BY:	JC	
REVIEWED BY:	DB	29 and 30
JOB NO:	10092078	

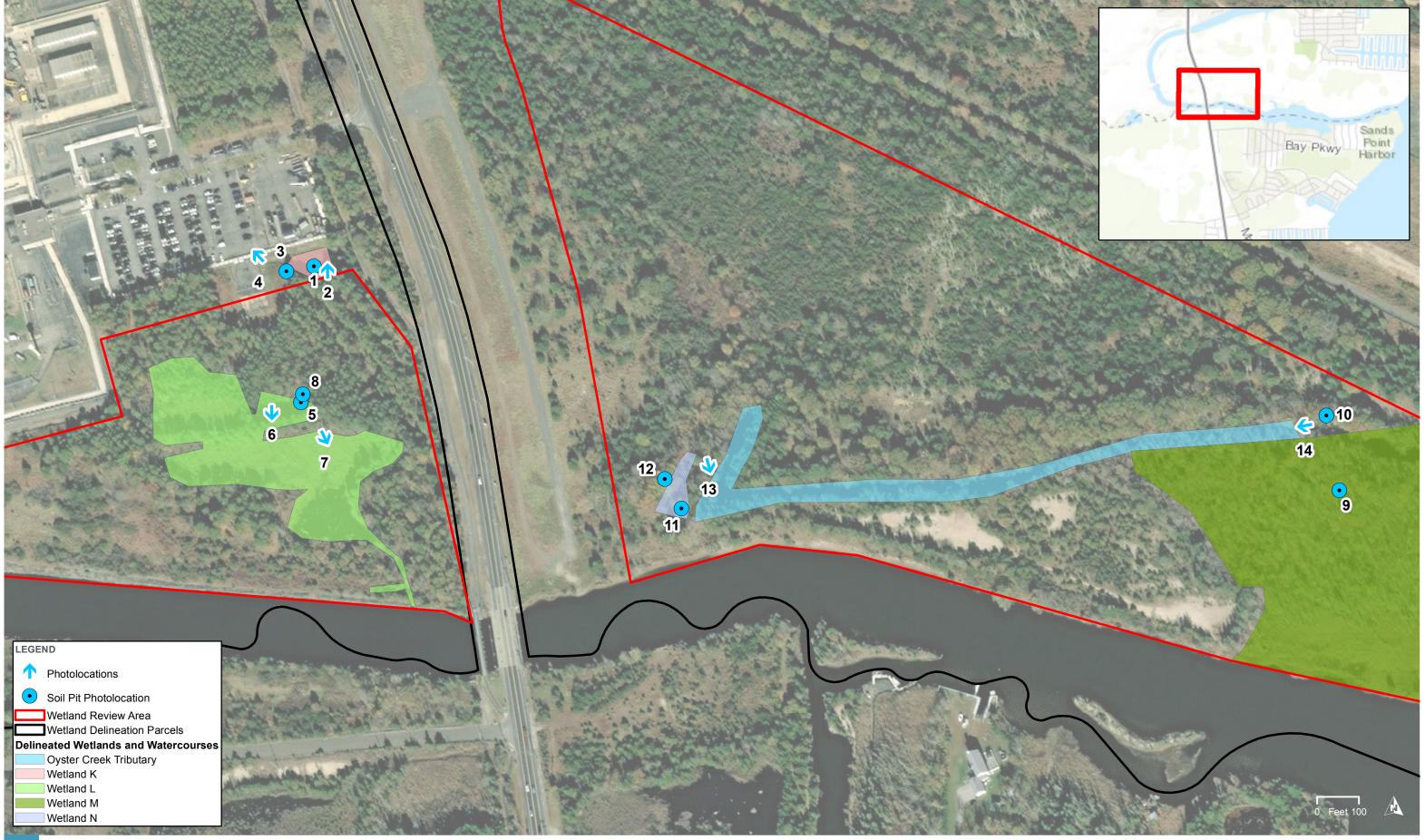


Photo 31: Photo of Wetland D on southern edge of Holtec property.



Photo 32: Photo of channel and culverts on south side of Discharge Drive.

DATE:	05/08/20	PHOTO
CREATED BY:	JC	
REVIEWED BY:	DB	31 and 32
JOB NO:	10092078	



FDR Orsted

OCEAN WIND - OYSTER CREEK LANDING
PHOTOLOGATION MAP



Photo 1: Photo of wetland soil profile of Wetland K.



Photo 2: Photo of Wetland K vegetation.

DATE:	05/08/20	PHOTO
CREATED BY:	JC	
REVIEWED BY:	DB	1 and 2
JOB NO:	10092078	



Photo 3: Photo of upland soil profile outside of Wetland K.



Photo 4: Photo of upland vegetation outside of Wetland K.

DATE:	05/08/20	PHOTO
CREATED BY:	JC	
REVIEWED BY:	DB	3 and 4
JOB NO:	10092078	



Photo 5: Photo of Wetland L soil pit location.



Photo 6: Photo of Wetland L vegetation.

		DATE:	05/08/20	PHOTO
Orsted Ocean Wind Project	Wetland Delineation - Oyster Creek	CREATED BY:	JC	
Orsted Ocean Wind Project	Photography R	REVIEWED BY:	DB	5 and 6
	3 · F · 7	JOB NO:	10092078	



Photo 7: Photo of pond with white water lillies of Wetland L.



Photo 8: Photo of upland soil pit location outside of Wetland L.

Orsted Ocean Wind Project

Wetland Delineation - Oyster Creek
Photography

DATE: 05/08/20 PHOTO
CREATED BY: JC
REVIEWED BY: DB
JOB NO: 10092078

7 and 8



Photo 9: Photo of Wetland M soil profile.



Photo 10: Photo of upland soil pit location outside of Wetland M.

Wetland Delineation - Oyster Creek Photography



Photo 11: Photo of Wetland N soil pit.



Photo 12: Photo of upland soil pit location outside of Wetland N.

DATE:	05/08/20	PHOTO
CREATED BY:	JC	
REVIEWED BY:	DB	11 and 12
JOB NO:	10092078	



Photo 13: Photo of Oyster Creek tributary.



Photo 14: Photo of Oyster Creek tributary.

DATE:	05/08/20	PHOTO
	00.00.00	111010
CREATED BY:	JC	
REVIEWED BY:	DB	13 and 14
JOB NO:	10092078	



FDR Orsted

OCEAN WIND - OYSTER CREEK LANDING
DELINEATED WETLANDS AND WATERCOURSES PHOTOMAP



Photo 1: Photo of Wetland A upland soil profile.



Photo 2: Photo of Wetland A upland vegetation.

DATE:	01/25/22	PHOTO
CREATED BY:	JC	
REVIEWED BY:	ZL	1 and 2
JOB NO:	10092078	



Photo 3: Photo of Wetland A vegetation facing east.



Photo 4: Photo of Wetland A soil profile.

Wetland Delineation - Oyster Creek Landing Photography
 DATE:
 01/25/22
 PHOTO

 CREATED BY:
 JC

 REVIEWED BY:
 ZL

 JOB NO:
 10092078

3 and 4



Photo 5: Photo of Wetland E soil pit location.

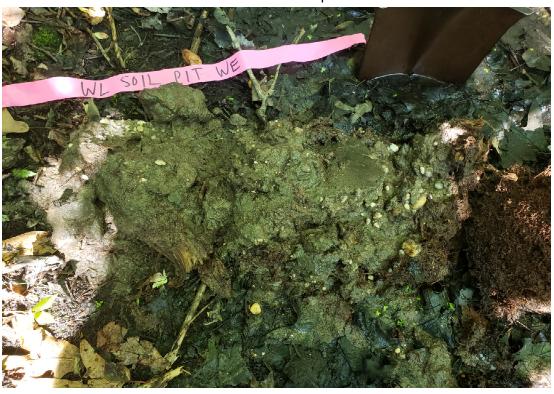


Photo 6: Photo of Wetland E soil profile.

DATE:	01/25/22	PHOTO
CREATED BY:	JC	
REVIEWED BY:	ZL	5 and 6
JOB NO:	10092078	



Photo 7: Photo of Wetland E upland soil pit location.



Photo 8: Photo of Wetland E upland soil profile.

DATE:	01/25/22	PHOTO
CREATED BY:	JC	
REVIEWED BY:	ZL	7 and 8
JOB NO:	10092078	



Photo 9: Photo of Wetland C upland soil profile.



Photo 10: Photo of Wetland A soil profile.

	DATE:	01/25/22	PHOTO
Wetland Delineation - Oyster Creek Landing	CREATED BY:	JC	9 and 10
Photography	REVIEWED BY:	ZL	
0 1 7	JOB NO:	10092078	



Photo 11: Photo of Wetland A soil pit location.



Photo 12: Photo of Wetland A soils.

DATE:	01/25/22	PHOTO
CREATED BY:	JC	
REVIEWED BY:	ZL	11 and 12
JOB NO:	10092078	



Photo 13: Photo of green-fringed orchid in Wetland E



Photo 14: Photo of prickly pear cactus observed in the southwest corner of the site.

Wetland Delineation - Oyster Creek Landing Photography DATE: 01/25/22 PHOTO
CREATED BY: JC
REVIEWED BY: ZL
JOB NO: 10092078 13 and 14



Photo 15: Photo of easten boundary along Barnegat Bay shoreline at Oyster Creek.



Photo 16: Photo of easten boundary along Barnegat Bay shoreline at Oyster Creek.

Wetland Delineation - Oyster Creek Landing Photography
 DATE:
 01/25/22
 PHOTO

 CREATED BY:
 JC

 REVIEWED BY:
 ZL

 JOB NO:
 10092078

15 and 16



FDR Orsted

OCEAN WIND - OYSTER CREEK
DELINEATED WETLANDS AND WATERCOURSES MAP



Photo 1: Photo facing northeast of Shore Road.



Photo 2: Photo of wetland soil profile of Wetland A

Wetland Delineation - Island Beach State Park Photography DATE: 12/08/21 PHOTO
CREATED BY: DV
REVIEWED BY: 1 and 2

JOB NO: 10092078



Photo 3: Photo facing east of Wetland B.



Wetland Delineation - Island Beach State Park **Photography**

РНОТО DATE: 12/08/21 CREATED BY: REVIEWED BY: 3 and 4 JOB NO: 10092078



Photo 5: Photo facing east of the access road off Shore Road.



Photo 6: Photo of Wetland B facing Barnaget Bay.

Wetland Delineation - Island Beach State Park Photography

DATE:	12/09/21	PHOTO
CREATED BY:	DV	
REVIEWED BY:		5 and 6
JOB NO:	10092078	



Photo 7: Photo facing northeast of Wetland B.



Photo 8: Photo of Wetland B vegetation.

Wetland Delineation- Island Beach State Park Photography

DATE:	12/08/21	PHOTO
CREATED BY:	DV	
REVIEWED BY:		7 and 8
JOB NO:	10092078	



Photo 9: Photo of Wetland C vegetation.



Photo 10: Photo of Wetland C vegetation.

Wetland Delineation - Island Beach State Park Photography

DATE:	12/08/21	PHOTO
CREATED BY:	DV	
REVIEWED BY:		9 and 10
JOB NO:	10092078	



Attachment C. Letter of Interpretation (LOI) Approval and Plan



State of New Jersey

CHRIS CHRISTIE

KIM GUADAGNO

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Division of Land Use Regulation
Mail Code 501-02A, P. O. Box 420
Trenton, New Jersey 08625-0420
www.state.nj.us/dep/landuse

BOB MARTIN Commissioner

Kyle Mitton South Main Street Forked River, NJ 08731 AUG 1 5 2017.

RE: Freshwater Wetlands Letter of Interpretation: Line Verification

File No.: 1512-17-0013.1

Activity Number: FWW170001

Applicant: Kyle Mitton

Block(s) and Lot(s): [1001, 4.05] Lacey Township, Ocean County

Dear Mr. Mitton:

This letter is in response to your request for a Letter of Interpretation to have Division of Land Use Regulation (Division) staff verify the boundary of the freshwater wetlands and/or State open waters on the referenced property.

In accordance with agreements between the State of New Jersey Department of Environmental Protection, the U.S. Army Corps of Engineers Philadelphia and New York Districts, and the U.S. Environmental Protection Agency, the NJDEP, the Division is the lead agency for establishing the extent of State and Federally regulated wetlands and waters. The USEPA and/or USACOE retain the right to reevaluate and modify the jurisdictional determination at any time should the information prove to be incomplete or inaccurate.

Based upon the information submitted, and upon a site inspection conducted by Division staff on June 6, 2017, the Division has determined that the wetlands and waters boundary line(s) as shown on the plan map entitled: "WETLANDS SURVEY, TAX LOT 4.05, BLOCK 1001, REAR OF SOUTH MAIN STREET, TOWNSHIP OF LACEY, OCEAN COUNTY, NEW JERSEY", prepared by DPK Consulting, and dated 1/20/17, last revised 6/27/17 is accurate as shown.

Freshwater Wetlands Letter of Interpretation: Line Verification DLUR File # 1512-17-0013.1 FWW170001 Page 2

Wetlands Resource Value Classification ("RVC")

In addition, the Division has determined that the resource value and the standard transition area or buffer required adjacent to the delineated wetlands are as follows:

Intermediate: All freshwater wetland flag points on or immediately adjacent to the above referenced site. [50 foot wetland buffer]

RVC may affect requirements for wetland and/or transition area permitting. This classification may affect the requirements for an Individual Wetlands Permit (see N.J.A.C. 7:7A-7), the types of Statewide General Permits available for the property (see N.J.A.C. 7:7A-4 & 5) and any modification available through a transition area waiver (see N.J.A.C. 7:7A-6). Please refer to the Freshwater Wetlands Protection Act (N.J.S.A. 13:9B-1 et seq.) and implementing rules for additional information.

Wetlands resource value classification is based on the best information available to the Department. The classification is subject to reevaluation at any time if additional or updated information is made available, including, but not limited to, information supplied by the applicant.

General Information

Pursuant to the Freshwater Wetlands Protection Act Rules, you are entitled to rely upon this jurisdictional determination for a period of five years from the date of this letter unless it is determined that the letter is based on inaccurate or incomplete information. Should additional information be disclosed or discovered, the Division reserves the right to void the original letter of interpretation and issue a revised letter of interpretation.

Regulated activities proposed within a wetland, wetland transition area or water area, as defined by N.J.A.C. 7:7A-2.2 and 2.6 of the Freshwater Wetlands Protection Act rules, require a permit from this office unless specifically exempted at N.J.A.C. 7:7A-2.8. The approved plan and supporting jurisdictional limit information are now part of the Division's public records.

This letter in no way legalizes any fill which may have been placed, or other regulated activities which may have occurred on-site. This determination of jurisdiction extent or presence does not make a finding that wetlands or water areas are "isolated" or part of a surface water tributary system unless specifically called out in this letter as such. Furthermore, obtaining this determination does not affect your responsibility to obtain any local, State, or Federal permits which may be required.

Appeal Process

In accordance with N.J.A.C. 7:7A-1.7, any person who is aggrieved by this decision may request a hearing within 30 days of the date the decision is published in the DEP Bulletin by writing to: New Jersey Department of Environmental Protection, Office of Legal Affairs, Attention: Adjudicatory Hearing Requests, P.O. Box 402, Trenton, NJ 08625-0402. This request

Freshwater Wetlands Letter of Interpretation: Line Verification DLUR File # 1512-17-0013.1 FWW170001 Page 3

must include a completed copy of the Administrative Hearing Request Checklist found at www.state.nj.us/dep/landuse/forms. Hearing requests received after 30 days of publication notice may be denied. The DEP Bulletin is available on the Department's website at www.state.nj.us/dep/bulletin. In addition to your hearing request, you may file a request with the Office of Dispute Resolution to engage in alternative dispute resolution. Please see the website www.nj.gov/dep/odr for more information on this process.

Please contact Lisa Dunne of our staff by e-mail at lisa.dunne@dep.nj.gov or by phone at (609) 777-0454 should you have any questions regarding this letter. Be sure to indicate the Department's file number in all communication.

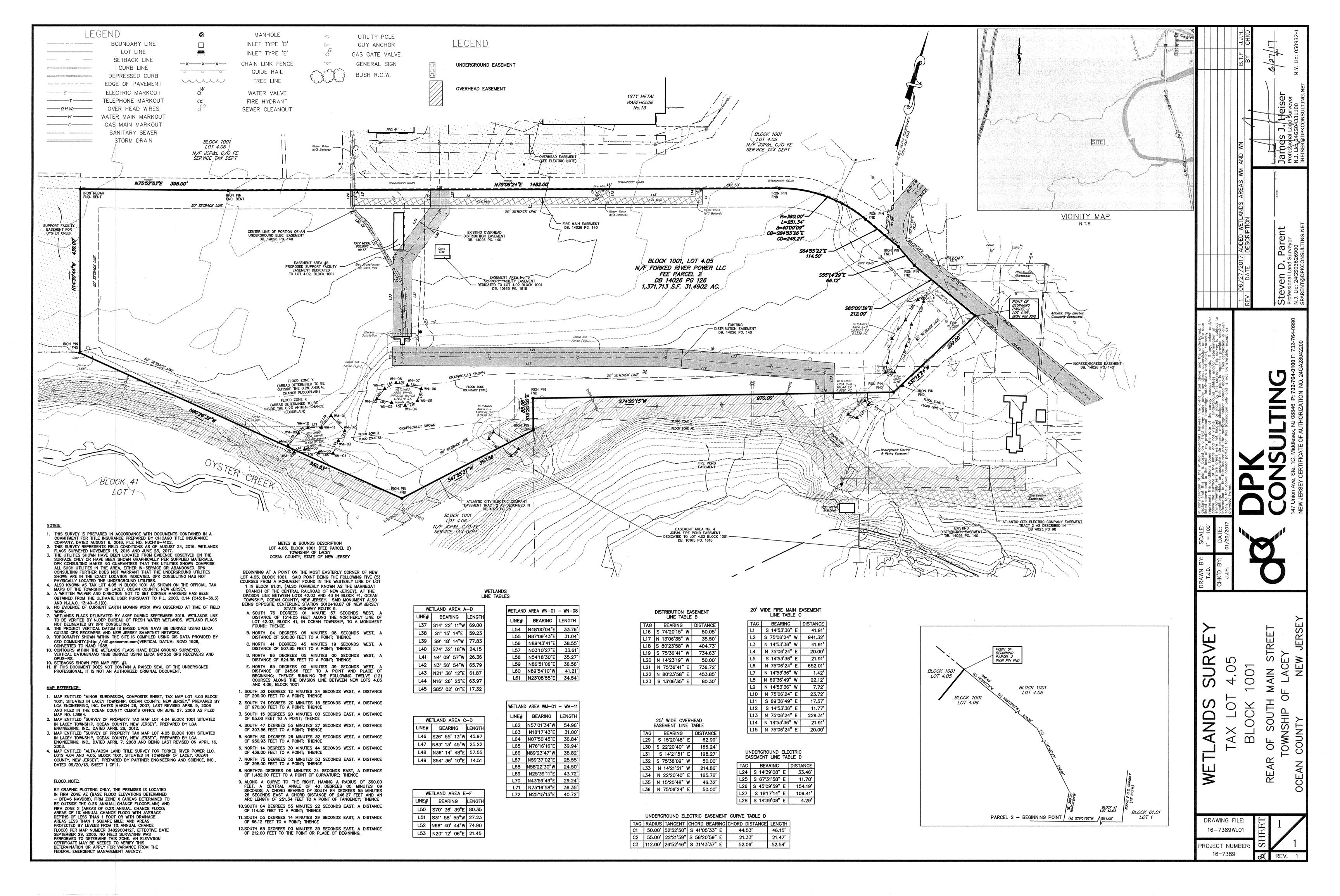
Sincerely,

PR. Walousk

Ryan J. Anderson, Manager Coastal Bureau

Division of Land Use Regulation

c: Municipal Clerk
Municipal Construction Official
Agent (original)





Attachment D. Wetland Delineation Plan



Attachment E Wetland Delineation Datasheets

Project/Site: Ors	ted			City/County:	Ocean County	Sampling Date:	: 6/24/2019
Applicant/Owner:	Ocean Wind -	Farm Property			State: NJ	Sampling Point:	: OP1-WA-UP
Investigators: Da	avid Brizzolara		Zachary Le	hmann	Section, Township, Ra	nge S TLa	icey R
Landform (hillslope, t	terrace, etc.):	Terrace		Local Relief (concave, convex, none):	None	Slope(%) 0-2%
Subregion (LRRor MI	LRA): LRR T		Lat: 39.8	B15067	Long: -74.166007	Datu	ım: Decimal Degrees
Soil Map Unit Name:	Appoquinir	mink-Transquak	ina-Mispillio	n complex		sification: E2EM5F	 D
Are climatic / hydrolo						explain in Remarks	
Are Vegetation	_				Are "Normal Circumstar		
Are Vegetation	, 3011,	nyurology	_, Haturally	problematic?	(If needed, explain an	y answers in Remar	ks.)
SUMMARY OF	FINDINGS -	Attach a sit	te map sh	<u>owing sampling po</u>	int locations, trans	ects, importan	t features, etc.
Hydrophytic Vegeta	ation Present?	Yes	No X				
Hydric Soil Present		Yes	No X	Is the Sampled Are	a		
Wetland Hydrology	Present?	Yes	No X	within a Wetland?	Yes	NoX	<u>(</u>
Remarks:							
Observation point ta	aken along road	lside, potential h	nistoric fill				
HYDROLOGY							
Wetland Hydrology	Indicators:				Seconda	ry Indicators (minim	um of two required)
Primary Indicators (r	minimum of one	is required; ch	eck all that a	pply)	Sur	face Soil Cracks (B6)	
Surface Water (A1)	ı		Aquatic	Fauna (B13)	Spa	rsely Vegetated Conca	ave Surface (B8)
High Water Table (A	A2)			posits (B15) (LRR U)	Dra	inage Patterns (B10)	
Saturation (A3)				en Sulfide Odor (C1)	☐ Mos	ss Trim Lines (B16)	
Water Marks (B1)			_ , ,	d Rhizospheres along Living R	coots (C3)	-Season Water Table (C2)
Sediment Deposits	(B2)			e of Reduced Iron (C4)		yfish Burrows (C8)	
Drift Deposits (B3)				Iron Reduction in Tilled Soils (C6) Sati	uration Visible on Aeria	ıl Imag.(C9)
Algal Mat or Crust ((B4)			ick Surface (C7)		omorphic Position (D2)	
Iron Deposits (B5)				Explain in Remarks)	Sha	Illow Aquitard (D3)	
Inundation Visible o	on Aerial Imagery	(B7)		-xpiaiii iii i teiriaiks)	☐ FAC	C-Neutral Test (D5)	
Water-Stained Leav		. ,			Sph	nagnum moss (D8) (LR	R T,U)
Field Observations:							
Surface Water Preser	_	es No	X De	pth (inches):			
Water Table Present		es No		pth (inches):			
Saturation Present?	Υ	es No	X De	pth (inches):	Wetland Hydr	rology Present?	Yes No_X_
(includes capillary frin							
Describe Recorded Data	ı (stream gauge, r	nonitoring well, ae	erial photos, pre	evious inspections), if available	e:		
B							
Remarks:	Post						
No wetland hydrology in	dicators present						



(Plot size: 30 Ft)

(Plot size: 6 Ft)

(Plot size: 30 Ft)

Tree Stratum

Shrub Stratum

Herb Stratum

Vine Stratum

Rhus copallinum

Solidago altissima

Lonicera japonica

Toxicodendron radicans

Parthenocissus quinquefolia

Phragmites australis

Rosa rugosa

<u>Absolute</u>

% Cover

60

30

90

40

10

50

30

15

10

Dominant

Species

=Total Cover

Υ

Ν

=Total Cover

Υ

Υ

Ν

=Total Cover

Status

UPL

FACU

FACU

FACW

FACU

FAC

FACU

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

Negative for prevalence index and dominance test

Yes

No

Χ

Hydrophytic Vegetation Present? SOIL Sampling Point: OP1-WA-UP

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

Depth	1		Matrix			Redox F	eatures					
(inche		Color	(moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Re	emarks	
0 to	5	10YR	3/1	50	10YR 6/1	50	С	М	SAND	Organic	s	
5 to	12	10YR	3/4	100					SAND			
12 to	20	10YR	3/3	100					SAND			
¹Type:	C=Con	centration, D	=Depletion,	RM=Redu	uced Martix, CS=Co	overed or	Coated	Sand Gra	ains. ² Location: PL=Pore L	ining, M=Matr	ix.	
_		ndicators:			Polyvalue Below S	Surface (S	8) (LRR S.	T, U)	Indicators for Problemat	ic Hydric So	ils: 3	
_	tosol (A1	*			Thin Dark Surface	e (S9) (LR	R S, T, U)		1 cm Muck (A9) (LRR O)			
\equiv	tic ⊑pipe ck Histic	edon (A2)			Loamy Mucky Mir	eral (F1) (LRR O)		2 cm Muck (A10) (LRR S)		
		sulfide (A4)			Loamy Gleyed Ma	atrix (F2)			Reduced Vertic (F18) (ou	tside MLRA 150)A,B)	
= '	-	ayers (A5)		1	Depleted Matrix (F	=3)			Piedmont Floodplain Soil	s (F19) (LRR P,	S, T)	
		dies (A6) (LRR	P, T, U)		Redox Dark Surfa	ice (F6)			Anomalous Bright Loamy (MLRA 153B)	Soils (F20)		
5 cr	n Mucky	Mineral (A7)	(LRR P, T, U)		Depleted Dark Su	rface (F7)			Red Parent Material (TF2	1		
Mud	ck Prese	ence (A8) (LRF	R U)	ĺ	Redox Depression				Very Shallow Dark Surface	•	T. U)	
1 cr	m Muck	(A9) (LRR P, 1	Γ)		Marl (F10) (LRR U	. ,			Other (Explain in Remark		, -,	
Dep	oleted Be	elow Dark Surf	ace (A11)	·	Depleted Ochric (-	RA 151)		3 Indicators of hydrophyl	·		
_		Surface (A12)		·	Iron-Manganese N	, ,	,) P T)	hydrology must be pre		ia wetiana	
		e Redox (A16)) '	Umbric Surface (F	•	, ,	Σ, Γ, Τ)	unless disturbed or pro	blematic.		
	-	ky Mineral (S1)	(LRR O, S)				-					
	ndy Gley ndy Redd	ed Matrix (S4)			Delta Ochric (F17			-0D)				
_	•	ox (S5) atrix (S6)			Reduced Vertic (F	, ,		,				
		unx (36) ce (S7) (LRR P	S T II)		Piedmont Floodpl	•		•				
Dai	K Guriac	e (O7) (LITITI	, 0, 1, 0)		Anomalous Bright	Loamy So	oils (F20) (MLRA 149	9A, 153C, 153D)			
		ve Layer (i	f observed	i):								
Typ Dep	e: oth (inch	es):							Hydric Soil Present?	Yes	No	X
Remarks:	:											
No hyd	ric soil ir	ndicators obse	rved									

Project/Site: Or	sted			City/Coun	ty: Ocean	County	Sampling Date:	6/24/2019
Applicant/Owner:	Ocean Wind	- Farm Pro	perty			State: NJ	Sampling Point:	OP2-WA-WET
Investigators: [David Brizzolara	ì	Zachary	/ Lehmann	Section	n, Township, Rang	e S TLac	cey R
Landform (hillslope,	terrace, etc.):	Dej	oression	L	ocal Relief (concave	, convex, none): (Concave	Slope(%)
Subregion (LRRor N	MLRA): LRR	 Г	Lat:	39.815017	Long:	-74.165943	Datur	n: Decimal Degrees
Soil Map Unit Name	· —		 -	illion complex			cation: E2EM5P	
Are climatic / hydrol	logic conditions	on the site	typical for this	time of year?	Yes X No	(If No, ex	plain in Remarks)	
Are Vegetation	-			-	Are "No	ormal Circumstance		s X No
Are Vegetation						eded, explain any a		
SUMMARY OF	FINDINGS	- Attach	a site map	showing san	npling point loc			
Hydrophytic Vege	tation Present?	Yes	X No					
Hydric Soil Preser	nt?	Yes	X No		ampled Area Wetland?			
Wetland Hydrolog	y Present?	Yes	X No	Within a	wetiand?	Yes	X No	
wetland hydrology	an prosont.							
HYDROLOGY								ım of two required)
Primary Indicators Surface Water (A' High Water Table Saturation (A3) Water Marks (B1) Sediment Deposit Drift Deposits (B3) Algal Mat or Crust Iron Deposits (B5) Inundation Visible Water-Stained Le Field Observations Surface Water Pres	1) (A2) (S (B2)) t (B4)) on Aerial Imager aves (B9)	y (B7)	Aqu Aqu Aqu Ayv Oxi Pre Rec Thi	uatic Fauna (B13) rl Deposits (B15) (Lf drogen Sulfide Odor dized Rhizospheres sence of Reduced Ir cent Iron Reduction i n Muck Surface (C7 ner (Explain in Rema	(C1) along Living Roots (C3) on (C4) in Tilled Soils (C6)	Sparse Draina Moss 7 Dry-Se Crayfis Satura Geome	e Soil Cracks (B6) ely Vegetated Concav ge Patterns (B10) Trim Lines (B16) eason Water Table (C sh Burrows (C8) tion Visible on Aerial prephic Position (D2) w Aquitard (D3) leutral Test (D5) num moss (D8) (LRF	C2) Imag.(C9)
Water Table Preser		Yes Yes X	No X	Depth (inches):				
Saturation Present?		Yes X Yes X	No	Depth (inches): Depth (inches):	0	Wetland Hydrol	ogy Present?	Yes _X_ No
(includes capillary fr Describe Recorded Da	ringe)							
Remarks: Wetland hydrology ind	icators present							



(Plot size: 6 Ft)

Tree Stratum

Shrub Stratum

Herb Stratum

Vine Stratum

Phragmites australis

<u>Absolute</u>

% Cover

70

Dominant

Species

=Total Cover

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

Hydrophytic vegetation present based on dominance test and prevalence index

Yes

No

Hydrophytic Vegetation Present? SOIL Sampling Point: OP2-WA-WET

Depth	ption: (Des	Matrix	depth nee	eded to documen		eatures	confirm t	the absence of Indicators.)	
(inches)	Color	(moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 20	10YR	2/1	100					SAND	Fiborous muck
¹Type: C=Cond	centration, D	=Depletion,	RM=Redu	ced Martix, CS=Co	overed or	Coated S	Sand Grai	ins. ² Location: PL=Pore Lining,	M=Matrix.
5 cm Mucky Muck Prese 1 cm Muck (Depleted Be Thick Dark (Coast Prairi Sandy Muck Sandy Gleye Sandy Redo Stripped Ma	don (A2) (A3) ulfide (A4) yers (A5) dies (A6) (LRR Mineral (A7) (nce (A8) (LRR P, T elow Dark Surf Surface (A12) e Redox (A16) ty Mineral (S1) ed Matrix (S4)	LRR P, T, U) U) ace (A11) (MLRA 150A) (LRR O, S)		Polyvalue Below S Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfa Depleted Dark Surfa Depleted Dark Surfa Redox Depression Marl (F10) (LRR U Depleted Ochric (Iron-Manganese N Umbric Surface (F Delta Ochric (F17 Reduced Vertic (F Piedmont Floodpl Anomalous Bright	e (S9) (LRI neral (F1) (atrix (F2) F3) ace (F6) urface (F7) ns (F8) J) F11) (MLF Masses (F- F13) (LRR r) (MLRA 1 F18) (MLRA 1	R S, T, U) LRR O) 12) (LRR O P, T, U) 51) A 150A, 15 F19) (MLRA	, P, T) 0B) A 149A)	Indicators for Problematic Hy 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outside Mark of the priedmont Floodplain Soils (F19) Anomalous Bright Loamy Soils (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (TF1) Other (Explain in Remarks) 3 Indicators of hydrophytic vegon hydrology must be present, unless disturbed or problematics. A, 153C, 153D)	MLRA 150A,B)) (LRR P, S, T) (F20) 12) (LRR T, U) etation and wetland
Restricti Type: Depth (inche	ve Layer (i	f observed	i):					Hydric Soil Present? Ye	es <u>X</u> No
Remarks: Hydric soil indic	· <u>-</u>								

Project/Site: Orsi	iea				unty:	Ocean	County	Sampling Date	. 6/2//2019	
Applicant/Owner:	Ocean Wind	- Farm Property	y			;	State: NJ_	Sampling Point	: OP-WC-UP	
Investigators: Da	avid Brizzolara		Zachar	y Lehmann		Section	n, Township, Rang	e S TLa	icey R	
Landform (hillslope, t	errace, etc.):	Terrace)		Local Relief	(concave,	convex, none): 1	None	Slope(%)	0-2%
Subregion (LRRor MI	LRA): LRR T		Lat:	39.814399		Long:	-74.175766	Datu	 ım: Decimal Degr	rees
Soil Map Unit Name:	Berryland	sand					NWI Classific	cation: PFO1Bo	1	
Are climatic / hydrolo			cal for this	s time of year?	Yes X	No	_	plain in Remarks		
-	-			•				•	,	•
Are Vegetation						Ale No	rmal Circumstance	es present:	es X No	, —
Are Vegetation	_, Soil,	Hydrology	, natur	ally problemati	C?	(If nee	eded, explain any a	ınswers in Remai	rks.)	
SUMMARY OF	FINDINGS	- Attach a si	ite map	showing s	ampling po	oint loca	ations, transe	cts, importan	it features, c	etc.
Hydrophytic Vegeta	ation Present?	Yes X	No							
Hydric Soil Present		Yes			Sampled Are					
Wetland Hydrology				WILIII	n a Wetland?		Yes	NoX	(
		Yes	No>	(
Remarks: Filled area next to be	ormed trail									
Tilled area riext to be	errifed trail.									
HYDROLOGY										
Wetland Hydrology	Indicators:						Secondary	Indicators (minim	um of two requ	ired)
Primary Indicators (r	minimum of on	e is required; c	heck all th	nat apply)			☐ Surfac	e Soil Cracks (B6)		
Surface Water (A1)				uetie Feure (B10)				ely Vegetated Conca	ave Surface (B8)	
High Water Table (A				uatic Fauna (B13)			= '	ge Patterns (B10)	(=0)	
Saturation (A3)				arl Deposits (B15)				Frim Lines (B16)		
Water Marks (B1)				drogen Sulfide Od	` '			ason Water Table (C2)	
	(DO)			idized Rhizosphe		Roots (C3)		th Burrows (C8)	02)	
Sediment Deposits	(D2)		∐ Pre	esence of Reduce	d Iron (C4)			tion Visible on Aeria	al Imag (CO)	
Drift Deposits (B3)	D4)			cent Iron Reduction		(C6)			.i imag.(C9)	
Algal Mat or Crust (В4)		☐ Th	in Muck Surface ((C7)			orphic Position (D2)		
Iron Deposits (B5)		(5-7)	Otl	ner (Explain in Re	emarks)			w Aquitard (D3)		
Inundation Visible o		(B7)						leutral Test (D5)	D.T.I.	
Water-Stained Leav	/es (B9)						Sphag	num moss (D8) (LR	R I,U)	
Field Observations:										
Surface Water Preser	nt? Y	Yes No	X	Depth (inches):	<u> </u>					
Water Table Present?	? }	/es No	X	Depth (inches):	·					
Saturation Present?	Υ	res No	X	Depth (inches):			Wetland Hydrol	ogy Present?	Yes No)_X_
(includes capillary frin		monitoring well a	orial photo	s provious inspo	otions) if availab	alo:				
Describe Recorded Data	i (stream gauge,	monitoring well, a	teriai prioto	s, previous inspe	ctions), if availab	oie:				
Remarks:										
No wetland hydrology in	dicators present									
,										



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

Hydric vegetation present based on dominance test and prevalence index

Yes

No

Vegetation Present?

SOIL Sampling Point: OP-WC-UP

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

Dept	า		Matrix			Redox	Features			
(inch		Color	(moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to	2	10YR	3/2	100					SAND	High root content
2 to	10	10YR	2/1	100					SAND	
10 to	20	10YR	2/1	80	10YR 4/1	20	D	М	SANDY LOAM	<u> </u>
¹Type:	C=Con	centration, D)=Depletion,	RM=Red	uced Martix, CS=C	overed o	r Coated	Sand Gra	ains. ² Location: PL=Pore Lini	ng, M=Matrix.
His His His His His Hy	tosol (A1 tic Epipe ck Histic drogen S atified La ganic Boo m Mucky ck Prese m Muck pleted Be ck Dark	idon (A2) (A3) ulfide (A4) uyers (A5) dies (A6) (LRF Mineral (A7) ince (A8) (LRF (A9) (LRR P, Telow Dark Surface (A12)	(LRR P, T, U) R U) Γ) face (A11))	Polyvalue Below Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Ma Depleted Matrix (Redox Dark Surfa Depleted Dark Su Redox Depressio Marl (F10) (LRR I Depleted Ochric (Iron-Manganese	e (S9) (LF neral (F1) atrix (F2) F3) ace (F6) urface (F7 ns (F8) J)	RR S, T, U) (LRR O)) RA 151)		Indicators for Problematic 1 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outsic Piedmont Floodplain Soils (F Anomalous Bright Loamy So (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (Other (Explain in Remarks) 3 Indicators of hydrophytic whydrology must be presen unless disturbed or proble	de MLRA 150A,B) F19) (LRR P, S, T) oils (F20) TF12) (LRR T, U) vegetation and wetland
Sa Sa Str Da	ndy Muck ndy Gley ndy Redd ipped Ma rk Surfac estricti	xy Mineral (S1 ed Matrix (S4) ox (S5) atrix (S6) ee (S7) (LRR F) (LRR O, S)		Umbric Surface (I Delta Ochric (F17 Reduced Vertic (I Piedmont Floodpi Anomalous Brigh	') (MLRA =18) (MLF lain Soils	151) RA 150A, 15 (F19) (MLR	A 149A)	·	Yes No _X
Remarks No hyd		ndicators prese	ent							

Project/Site: Orsted	1			City/Coun	nty: Ocea	n County		Sampling Date:	6/27/2019
Applicant/Owner: C	cean Wind - Far	m Property	,			State:	NJ	Sampling Point:	OP-WC-WET
Investigators: Davi	d Brizzolara		Zachary Leh	ımann	Section	on, Townshi _l	p, Range	S TLac	cey R
Landform (hillslope, teri	ace, etc.):	Toe of S	Slope	L	 _ocal Relief (concav	e, convex, n	one): C	oncave	Slope(%) 0-2%
Subregion (LRRor MLR	A): LRR T		Lat: 39.8	14365	Long	: -74.17575	 52	Datu	m: Decimal Degrees
Soil Map Unit Name:	Berryland sand	b						ation: PFO1Bd	
Are climatic / hydrologic	conditions on th	ne site typic	al for this time	e of year?	Yes X No	(1	f No, exp	olain in Remarks)	
Are Vegetation,	Soil, Hyd	drology	, significant	ly disturbed?	? Are "N	lormal Circu	mstance	s" present? Ye	es X No
Are Vegetation,	Soil, Hyd	drology	, naturally p	roblematic?	(If ne	eeded, expla	ain any ar	nswers in Remark	ks.)
SUMMARY OF FI	NDINGS - At	tach a si	te map sho	owing sar	npling point lo	cations, t	ransec	ts, importan	t features, etc.
Hydrophytic Vegetation	n Present?	Yes X	No						
Hydric Soil Present?		Yes X	No		Sampled Area				
Wetland Hydrology Pr	rocent?	Yes X	No	within a	a Wetland?	`	Yes	X No	<u>—</u>
Remarks:									
HYDROLOGY									
Wetland Hydrology In		and the state of the		I - A		Sec	ondary Ir	ndicators (minimu	um of two required)
Primary Indicators (mir	ilmum of one is r	requirea; cr	ieck all triat af	оріу)			_	Soil Cracks (B6)	
Surface Water (A1)			Aquatic F	auna (B13)			= '	y Vegetated Conca	ve Surface (B8)
High Water Table (A2)	i		Marl Dep	oosits (B15) (L	RR U)		_	e Patterns (B10)	
Saturation (A3)			_ ′ °	n Sulfide Odor	, ,			rim Lines (B16)	20)
Water Marks (B1)	2)		_		along Living Roots (C	3)	_	ason Water Table (C	,2)
Sediment Deposits (B2 Drift Deposits (B3)	2)			e of Reduced I	* *		_	n Burrows (C8) on Visible on Aerial	Imag (CO)
Algal Mat or Crust (B4	١				in Tilled Soils (C6)		_	rphic Position (D2)	illag.(C9)
Iron Deposits (B5))		_	ck Surface (C7			_	Aquitard (D3)	
Inundation Visible on A	Aerial Imagery (B7)		U Other (E	xplain in Rema	arks)		_	eutral Test (D5)	
✓ Water-Stained Leaves							_	um moss (D8) (LRF	2 T I I \
	(D3)						Opilagii	um moss (Do) (Em	
Field Observations:	.,		5						
Surface Water Present?		No		oth (inches):					
Water Table Present? Saturation Present?	Yes	X No		oth (inches):	6	Wetland	Hvdrolo	gy Present?	Yes _X_ No
(includes capillary fringe	Yes)	X_ No	Det	oth (inches):	0	Wotania	,	,gy 1 10001111	.00 <u>A</u> .10
Describe Recorded Data (s	/	toring well, a	erial photos, pre	vious inspectio	ons), if available:				
Remarks:									
Wetland hydrology indicato	rs present								
Wolland Hydrology maloato	ro procent								



(Plot size: 30 Ft)

(Plot size: 30 Ft)

(Plot size: 6 Ft

Tree Stratum

Shrub Stratum

Herb Stratum

Vine Stratum

Acer rubrum

Vaccinium corymbosum

Sassafras albidum

Phragmites australis

Osmundastrum cinnamomeum

<u>Absolute</u>

% Cover

35

30

5

35

95

5

100

Dominant

Species

Υ

=Total Cover

Υ

Ν

=Total Cover

Υ

Ν

=Total Cover

Indicator

Status

FAC

FACW

FACU

FACW

FACW

Hydrophytic vegetation present based on dominance test and prevalence index

Woody vine – All woody vines, regardless of height.

Yes

No

Hydrophytic Vegetation Present? SOIL Sampling Point: OP-WC-WET

Depth	·	Matrix	•	_	Redox F	eatures	confirm	<u> </u>	
(inches)	Color	(moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 4	10YR	2/1	100			CS		SANDY LOAM	organic layer - mucky texture
4 to 20	10YR	2/1	100					SAND	
¹Type: C=Cor	centration, [D=Depletion,	RM=Red	uced Martix, CS=Co	overed or	Coated S	Sand Gra	ains. ² Location: PL=Pore	Lining, M=Matrix.
Muck Prese I tem Muck Depleted B Thick Dark Coast Prair Sandy Muc Sandy Gley Sandy Red Stripped Ma	edon (A2) c (A3) Sulfide (A4) ayers (A5) dies (A6) (LRF y Mineral (A7) ence (A8) (LRF (A9) (LRR P, elow Dark Sur Surface (A12) die Redox (A16 ky Mineral (S1) red Matrix (S4) ox (S5)	(LRR P, T, U) R U) T) face (A11)) (MLRA 150A) (LRR O, S)		Polyvalue Below S Thin Dark Surface Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfa Depleted Dark Su Redox Depression Marl (F10) (LRR U Depleted Ochric (I Iron-Manganese N Umbric Surface (F Delta Ochric (F17) Reduced Vertic (F	e (S9) (LRi eral (F1) (trix (F2) F3) ce (F6) rface (F7) ns (F8) J) F11) (MLF Alasses (F13) (LRR) (MLRA 1 F18) (MLRA 1 F18) (MLRA 1	R S, T, U) LRR O) 12) (LRR C P, T, U) 51) A 150A, 15 F19) (MLR	0, P, T) 0B) A 149A)	hydrology must be p unless disturbed or p	D) S) S) Sutside MLRA 150A,B) bils (F19) (LRR P, S, T) ny Soils (F20) F2) ace (TF12) (LRR T, U) rks) nytic vegetation and wetland
	ive Layer (if observe	d):	Anomalous Bright	Loanly St	Jiis (i 20) (i	VILITA 143	96, 1330, 1330)	
Type:	noe).							Hydric Soil Present?	Yes X No
Depth (inch Remarks:	ies):								
Hydric soils pre	esent								

Project/Site: Or	rsted			City/County:	Ocean County	Sampling Date: 6/27/2019
Applicant/Owner:	Ocean Wind -	Farm Property	,		State: NJ	Sampling Point: OP-WDE-UP
Investigators: [David Brizzolara		Zachary Le	hmann	Section, Township, Rang	ge S TLacey R
Landform (hillslope,	, terrace, etc.):	Terrace	ı	Local Relief (concave, convex, none):	None Slope(%) 0-2
Subregion (LRRor N	MLRA): LRRT		Lat: 39.8	311729	Long: -74.170307	Datum: Decimal Degrees
Soil Map Unit Name	. Appoaujaji	mink-Transqual	kina-Misnillia	n compley		ication: E2EM5P
Are climatic / hydrol				•		xplain in Remarks)
-	_					
Are Vegetation					Are "Normal Circumstance	es" present? Yes X No
Are Vegetation	, Soil,	Hydrology	, naturally	problematic?	(If needed, explain any	answers in Remarks.)
SUMMARY OF	FINDINGS -	Attach a si	te map sh	owing sampling po	int locations, transe	ects, important features, etc.
Hydrophytic Vogo	tation Procent?	Yes X	No			
Hydrophytic Vege Hydric Soil Preser				Is the Sampled Are	a	
,		Yes	No X	within a Wetland?	Yes	No X
Wetland Hydrolog	y Present?	Yes	No X			
Remarks:						
Upland Island						
HYDROLOGY						
Wetland Hydrolog	y Indicators:				Secondary	Indicators (minimum of two required)
Primary Indicators	J.	e is required: ch	neck all that a	(ylagı		
	`			,		ce Soil Cracks (B6)
Surface Water (A	•		Aquatic	Fauna (B13)	= :	ely Vegetated Concave Surface (B8)
High Water Table	(A2)		Marl De	eposits (B15) (LRR U)		age Patterns (B10)
Saturation (A3)			Hydroge	en Sulfide Odor (C1)		Trim Lines (B16)
Water Marks (B1)			Oxidized	d Rhizospheres along Living R	oots (C3) Dry-S	eason Water Table (C2)
Sediment Deposit	s (B2)		Presenc	ce of Reduced Iron (C4)	Crayfi	sh Burrows (C8)
Drift Deposits (B3)		Recent	Iron Reduction in Tilled Soils (C6) Satura	ation Visible on Aerial Imag.(C9)
Algal Mat or Crust	t (B4)			uck Surface (C7)		orphic Position (D2)
Iron Deposits (B5))			Explain in Remarks)	Shallo	ow Aquitard (D3)
Inundation Visible	on Aerial Imagery	(B7)	Other (I	_xpiairiir riemarks)	FAC-1	Neutral Test (D5)
Water-Stained Le		,			_	gnum moss (D8) (LRR T,U)
						, (-) () -)
Field Observation: Surface Water Pres		ina Na	V D.	anth (inches).		
Water Table Preser		es No		epth (inches): epth (inches):		
Saturation Present?		es No		epth (inches):	Wetland Hydro	logy Present? Yes No_X
(includes capillary fr		110	<u></u>			0.
		nonitoring well, a	erial photos, pre	evious inspections), if available) :	
Remarks:	-	-				
No wetland hydrology	indicators present					
No welland flydrology	ndicators present					



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

Hydrophytic vegetation present based on dominance test > 50%

US Army Corps of Engineers

Yes

No

SOIL Sampling Point: OP-WDE-UP

Redox Features

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

Matrix

Depth

(inches)	Colo	r (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	
0 to 8	10YR	2/1	100					SAND		
8 to 14	10YR	4/2	80	10yr 3/4	20	С	M	SANDY LOAM	_	
14 to 20	10YR	8/3	60	10yr 5/8	40	С	M	SAND		
¹Type: C=Cond	centration, [D=Depletion,	RM=Red	luced Martix, CS=Co		r Coated	Sand Gra	nins. ² Location: PL=Pore Linir	ng, M=Matrix.	
5 cm Mucky Muck Prese 1 cm Muck (Depleted Be Thick Dark S Coast Prairie Sandy Muck Sandy Gleye	don (A2) (A3) ulfide (A4) yers (A5) dies (A6) (LRF Mineral (A7) nce (A8) (LRR A9) (LRR P, elow Dark Sur Surface (A12) e Redox (A16 by Mineral (S1 ed Matrix (S4)	(LRR P, T, U) R U) T) face (A11) S) (MLRA 150A)		Polyvalue Below S Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surface Depleted Dark Su Redox Depression Marl (F10) (LRR U Depleted Ochric (F17) Iron-Manganese M Umbric Surface (F	e (S9) (LRi neral (F1) (atrix (F2) F3) ace (F6) urface (F7) ns (F8) J) F11) (MLF Masses (F F13) (LRR 1) (MLRA 1	R S, T, U) (LRR O) RA 151) 12) (LRR C P, T, U)), P, T)	Indicators for Problematic I 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outsid Piedmont Floodplain Soils (F Anomalous Bright Loamy So (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (* Other (Explain in Remarks) Indicators of hydrophytic we hydrology must be presen unless disturbed or problemarks (AP)	de MLRA 150A,B) F19) (LRR P, S, T) iils (F20) TF12) (LRR T, U) regetation and wetland it,	
Sandy Redo				Reduced Vertic (F	-18) (MLR	A 150A, 15	60B)			
Stripped Ma	` '			Piedmont Floodpl	ain Soils (F19) (MLR	A 149A)			
☐ Dark Surfac	e (S7) (LRR F	P, S, T, U)		Anomalous Bright	Loamy S	oils (F20) (MLRA 149	A, 153C, 153D)		
	ve Layer (if observed	i):							
Type:								Hydric Soil Present?	Yes No	X
Depth (inche	es):									
Remarks: No hydric soils p	present									

Project/Site: O	rsted		City/C	ounty: Ocean	County	Sampling Date:	6/27/2019
Applicant/Owner:	Ocean Wind - F	arm Property		5	State: NJ	Sampling Point:	OP-WD-WET
Investigators:	David Brizzolara	Z	achary Lehmann	Section	, Township, Range	je S TLac	cey R
Landform (hillslope	e, terrace, etc.):	Depressio	n	Local Relief (concave,	convex, none): (Concave	Slope(%) 0-2%
Subregion (LRRor	MLRA): LRR T		Lat: 39.812020	- Long:	-74.170243	Datur	n: Decimal Degrees
Soil Map Unit Nam	· · · · · · · · · · · · · · · · · · ·	ink-Transquakin	g-Mispillion complex			cation: E2EM5P	
Are climatic / hydro	ologic conditions or	the site typical	for this time of year'	? Yes X No	(If No, ex	plain in Remarks)	
Are Vegetation _	, Soil, H	lydrology,	significantly disturb	ped? Are "Nor	mal Circumstance	es" present? Ye	s X No
Are Vegetation _	, Soil, H	lydrology,	naturally problemat	tic? (If need	ded, explain any a	answers in Remark	(s.)
SUMMARY O	F FINDINGS - 1	Attach a site	map showing	sampling point loca	ıtions, transe	cts, important	features, etc.
Hydrophytic Vege	etation Present?	Yes X N	lo				
Hydric Soil Prese		Yes X N		e Sampled Area			
Wetland Hydrolo	gy Present?		lo with	in a Wetland?	Yes	X No	
Remarks:							
HYDROLOGY							
Wetland Hydrolo					Secondary	Indicators (minimu	ım of two required)
Primary Indicators	s (minimum of one i	is required; chec	k all that apply)			e Soil Cracks (B6)	
Surface Water (A	,		Aquatic Fauna (B1	3)	= :	ely Vegetated Concav	re Surface (B8)
High Water Table	e (A2)		Marl Deposits (B15	5) (LRR U)		age Patterns (B10)	
Saturation (A3)			Hydrogen Sulfide C	Odor (C1)		Trim Lines (B16)	
Water Marks (B1	,		Oxidized Rhizosph	eres along Living Roots (C3)		eason Water Table (C	(2)
Sediment Depos	, ,		Presence of Reduc	ed Iron (C4)		sh Burrows (C8)	
✓ Drift Deposits (B			Recent Iron Reduc	tion in Tilled Soils (C6)		ation Visible on Aerial	Imag.(C9)
Algal Mat or Crus	, ,		Thin Muck Surface	e (C7)		orphic Position (D2)	
Iron Deposits (B	· ·		Other (Explain in R	Remarks)		w Aquitard (D3)	
=	e on Aerial Imagery (B	·/)			=	Veutral Test (D5)	· -
✓ Water-Stained L					Sphagi	num moss (D8) (LRF	1 I,U)
Field Observation	<u></u>						
Surface Water Pre			X Depth (inches	-			
Water Table Prese			X Depth (inches	· —	Watland Hudual	amy Duagant?	Voc. V. No.
Saturation Present		s <u>X</u> No _	Depth (inches	<u> </u>	Wetland Hydrol	ogy Present?	Yes X No
		onitoring well, aeria	al photos, previous insp	ections), if available:			
Remarks:							
Wetland hydrology pr	esent						



EGETATION Use scientific names of plants.				Sampl	ing Point:	: OP-V	VD-WET	<u> </u>
	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Wo	rksheet:			
Tree Stratum				Number of Dominant That Are OBL, FACV			3	(A)
Shrub Stratum (Plot size: 30 Ft Vaccinium corymbosum	25	Υ	FACW	Total Number of Dom Species Across all St			2	(D)
	25	=Total Cover	-	Species Across air St	Tala.		3	(B) -
Herb Stratum (Plot size: 6 Ft)		_	54004	Percent of Dominant That Are OBL, FACW		: _	100.0%	(A/B)
Phragmites australis Onoclea sensibilis		_ <u>Y</u> _	FACW	Prevalence Index W	orksheet	t:		
Officied Settsibilis	150			Total % Cover of:		Multip	oly by:	
Vino Stratum		=Total Cover		OBL species	0	x 1 =	0	
Vine Stratum				FACW species	175	x 2 =	350	
				FAC species	0	x 3 =	0	
				FACU species	0	x 4 =	0	 -
				UPL species	0	x 5 =	0	
				Column Totals:	175	(A)	350	(B)
				Prevalence Inde	ex = B/A=	=	2.00	
				Hydrophytic Vegetati	on Indic	ators:		
				1 - Rapid Test for	r Hydroph	nytic Ve	getation	
				X 2 - Dominance Te	est > 50%	6		
				X 3 - Prevalence In	dex ≤ 3.0)		
				Problematic Hydr	ophytic V	/egetatio	on (Exp	olain)
				Indicators of hydric soil a be present, unless distu				
				Definitions of Vegetat	ion Strat	ta:		
				Tree – Woody plants, e approximately 20 ft (6 r (7.6 cm) or larger in dia	n) or mor	e in héi	ght and	
				Sapling – Woody plants approximately 20 ft (6 r than 3 in. (7.6 cm) DBH	n) or mor	· · · ·		
				Shrub – Woody plants, approximately 3 to 20 fi	excluding t (1 to 6 n	g woody n) in hei	vines, ght.	
				Herb – All herbaceous herbaceous vines, rega plants, except woody vi 3 ft (1 m) in height.	ardless of	size. In	cludes v	voody
				Woody vine – All wood	y vines, r	egardles	ss of hei	ght.
				Hydrophytic	•			

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

Hydrophytic vegetation present based on dominance test and prevalence index

SOIL Sampling Point: OP-WD-WET

Depth Matrix	Redox Features	the absence of mulcators.)	
	% Color (moist) % Type ¹ Loc ²	Texture	Remarks
0 to 4 10YR 2/1 10	00	SAND	roots
4 to 20 10YR 2/1 10	00	SAND	
¹ Type: C=Concentration, D=Depletion, RM=	=Reduced Martix, CS=Covered or Coated Sand Gra	ains. ² Location: PL=Pore Lining.	, M=Matrix.
Hydric Soil Indicators: ☐ Histosol (A1) ☐ Histic Epipedon (A2) ☐ Black Histic (A3) ☑ Hydrogen Sulfide (A4) ☐ Stratified Layers (A5) ☐ Organic Bodies (A6) (LRR P, T, U) ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U) ☐ Muck Presence (A8) (LRR U) ☐ 1 cm Muck (A9) (LRR P, T) ☐ Depleted Below Dark Surface (A11) ☐ Thick Dark Surface (A12) ☐ Coast Prairie Redox (A16) (MLRA 150A) ☐ Sandy Mucky Mineral (S1) (LRR O, S) ☐ Sandy Gleyed Matrix (S4) ☐ Sandy Redox (S5) ☐ Stripped Matrix (S6) ☐ Dark Surface (S7) (LRR P, S, T, U)	Polyvalue Below Surface (S8) (LRR S, T, U) Thin Dark Surface (S9) (LRR S, T, U) Loamy Mucky Mineral (F1) (LRR O) Loamy Gleyed Matrix (F2) Depleted Matrix (F3) Redox Dark Surface (F6) Depleted Dark Surface (F7) Redox Depressions (F8) Marl (F10) (LRR U) Depleted Ochric (F11) (MLRA 151) Iron-Manganese Masses (F12) (LRR O, P, T) Umbric Surface (F13) (LRR P, T, U) Delta Ochric (F17) (MLRA 151) Reduced Vertic (F18) (MLRA 150A, 150B) Piedmont Floodplain Soils (F19) (MLRA 149A) Anomalous Bright Loamy Soils (F20) (MLRA 149A)	Indicators for Problematic Hy 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outside I Piedmont Floodplain Soils (F19 Anomalous Bright Loamy Soils (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (TF Other (Explain in Remarks) 3 Indicators of hydrophytic veg hydrology must be present, unless disturbed or problematics.	MLRA 150A,B) 9) (LRR P, S, T) (F20) 112) (LRR T, U) getation and wetland
Restrictive Layer (if observed): Type: Depth (inches): Remarks: Hydric soils present		Hydric Soil Present? Y	es <u>X</u> No

Project/Site: Orsted			City/County:	Ocean County Sampling Date: 6/26/2019
Applicant/Owner: Ocean V	Vind - Farm Propert	ty		State: NJ Sampling Point: OP-WE-UP
Investigators: David Brizze	olara	Zachary Lel	hmann	Section, Township, Range S T Lacey R
Landform (hillslope, terrace, et	c.): Terrac	e	Local Relief (co	oncave, convex, none): None Slope(%) 0-2%
Subregion (LRRor MLRA): LI	 BB T	Lat: 39.8		Long: -74.186940 Datum: Decimal Degrees
	rland sand			NWI Classification: E2EM5P
·		ical for this tim	e of year? Yes X	
Are climatic / hydrologic condit				No (If No, explain in Remarks)
Are Vegetation, Soil _				re "Normal Circumstances" present? Yes X No
Are Vegetation, Soil _	, Hydrology	, naturally	oroblematic?	(If needed, explain any answers in Remarks.)
SUMMARY OF FINDIN	GS - Attach a s	site map sh	owing sampling poir	nt locations, transects, important features, etc.
Hydrophytic Vegetation Pres	ent? Yes	No X		
Hydric Soil Present?	Yes	No X	Is the Sampled Area	
Wetland Hydrology Present?		No X	within a Wetland?	Yes NoX
Remarks:				
HYDROLOGY Wetland Hydrology Indicator Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)		Aquatic Marl De Hydroge Oxidized	pply) Fauna (B13) posits (B15) (LRR U) en Sulfide Odor (C1) d Rhizospheres along Living Roce e of Reduced Iron (C4) Iron Reduction in Tilled Soils (Ce	Crayfish Burrows (C8) Saturation Visible on Aerial Imag.(C9)
☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5)			ick Surface (C7)	Geomorphic Position (D2) Shallow Aquitard (D3)
Inundation Visible on Aerial Im	agery (B7)	U Other (E	Explain in Remarks)	FAC-Neutral Test (D5)
Water-Stained Leaves (B9)	-9-7 (- 1 /			Sphagnum moss (D8) (LRR T,U)
Field Observations:				
Surface Water Present?	Yes No	X De	pth (inches):	
Water Table Present?	Yes No		pth (inches):	
Saturation Present?	Yes No	X De	pth (inches):	Wetland Hydrology Present? Yes No_X_
(includes capillary fringe)				
Describe Recorded Data (stream gaser) Remarks:	auge, monitoring well,	aerial photos, pre	evious inspections), if available:	
No wetland hydrology indicators pre	esent			



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

US Army Corps of Engineers

Hydrophytic vegetation not present due to dominance test of 0% and prevalance index

SOIL Sampling Point: OP-WE-UP

Profile Desc	ription: (Des	cribe to the	depth ne	eeded to document	the ind	icator or	confirm	the absence of Indicators	s.)
Depth		Matrix				Features			
(inches)	Colo	r (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 2	10YR	2/2	100					SAND	Organics
2 to 16	10YR	5/3	100					SAND	
16 to 20	10YR	3/1	100					SAND	
¹Type: C=Co	ncentration, [D=Depletion,	RM=Red	luced Martix, CS=Co	overed or	r Coated	Sand Gra	ains. ² Location: PL=P	ore Lining, M=Matrix.
Black Hist Hydrogen Stratified I Organic B 5 cm Mucl Muck Pres 1 cm Mucl Depleted I Thick Darl Coast Pra Sandy Mu	A1) pedon (A2) pic (A3) Sulfide (A4) Layers (A5) odies (A6) (LRF ky Mineral (A7) sence (A8) (LRR P, k (A9) (LRR P, Below Dark Sur k Surface (A12) pirie Redox (A16 peyed Matrix (S4)	(LRR P, T, U) R U) T) face (A11)) (MLRA 150A) (LRR O, S))	Polyvalue Below S Thin Dark Surface Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfa Depleted Dark Su Redox Depression Marl (F10) (LRR L Depleted Ochric (I Iron-Manganese M Umbric Surface (F Delta Ochric (F17) Reduced Vertic (F	(E) (S9) (LR (F1) (LR (F2) (F3) (CF6) (F6) (F7) (F8) (J) (MLF (F7) (MLF (F7) (MLF (F7) (MLF (F7) (MLF (F7) (MLF (MLF (F7) (MLF (MLF (MLF (MLF (MLF (MLF (MLF (MLF	R S, T, U) (LRR O) RA 151) 12) (LRR C) P, T, U) (51)), P, T)	1 cm Muck (A9) (LF 2 cm Muck (A10) (LF Reduced Vertic (F1 Piedmont Floodplai Anomalous Bright L (MLRA 153B) Red Parent Materia Very Shallow Dark Other (Explain in Re	LRR S) 8) (outside MLRA 150A,B) In Soils (F19) (LRR P, S, T) Loamy Soils (F20) Il (TF2) Surface (TF12) (LRR T, U) emarks) Irrophytic vegetation and wetland be present,
Stripped N	Matrix (S6)			Piedmont Floodpla					
Dark Surfa	ace (S7) (LRR F	P, S, T, U)		Anomalous Bright	•		•	9A, 153C, 153D)	
Type: Depth (inc. Remarks: No hydric soils	ches):	if observed	-					Hydric Soil Present?	Yes No _X

Project/Site: Orsted	City/County:	Ocean County Sampling Date: 6/27/2019
Applicant/Owner: Ocean Wind - Farm Property		State: NJ Sampling Point: OP-WE-WET
Investigators: Steve Seymour	James Eberhardt	Section, Township, Range S T Lacey R
Landform (hillslope, terrace, etc.): Depressi	on Local Relief (concave, convex, none): None Slope(%) 0-2%
Subregion (LRRor MLRA): LRR T	Lat: 39.811366	Long: -74.185059 Datum: Decimal Degrees
Soil Map Unit Name: Atsion sand		NWI Classification: E2EM5P
Are climatic / hydrologic conditions on the site typical	Il for this time of year? Yes X	No (If No, explain in Remarks)
Are Vegetation, Soil, Hydrology	, significantly disturbed?	Are "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, Hydrology	_, naturally problematic?	(If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach a sit	e map showing sampling po	int locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X	No	
	No Is the Sampled Area within a Wetland?	
Wetland Hydrology Present? Yes X	No within a wetland?	Yes X No
Remarks:		
Site hydrology affected by extensive/historical ditch	ing. Pit located in WLE.	
HANDBOT OCA		
HYDROLOGY		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; che	eck all that apply)	Surface Soil Cracks (B6)
✓ Surface Water (A1)		Sparsely Vegetated Concave Surface (B8)
✓ High Water Table (A2)	Aquatic Fauna (B13) Marl Deposits (B15) (LRR U)	Drainage Patterns (B10)
Saturation (A3)	✓ Hydrogen Sulfide Odor (C1)	Moss Trim Lines (B16)
Water Marks (B1)	Oxidized Rhizospheres along Living R	Roots (C3) Dry-Season Water Table (C2)
Sediment Deposits (B2)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Drift Deposits (B3)	Recent Iron Reduction in Tilled Soils (
Algal Mat or Crust (B4)	☐ Thin Muck Surface (C7)	Geomorphic Position (D2)
Iron Deposits (B5)	Other (Explain in Remarks)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)		FAC-Neutral Test (D5)
Water-Stained Leaves (B9)		✓ Sphagnum moss (D8) (LRR T,U)
<u>Field Observations:</u>		
Surface Water Present? Yes X No	Depth (inches): 2	
Water Table Present? Yes X No	Depth (inches): 0	Wetland Hydrology Present? Yes X No
Saturation Present? Yes X No (includes capillary fringe)	Depth (inches): 0	
Describe Recorded Data (stream gauge, monitoring well, ae	rial photos, previous inspections), if available	e:
Standing water in old ditch 0.5-6" deep, no discerable flow.		
P		
Remarks:		



EGETATION_ \	Use scientific names of plants.				Sam	pling Point	: OP-V	WE-WET	<u> </u>
		Absolute % Cover	Dominant Species	Indicator Status	Dominance Test V	Vorksheet:			
Tree Stratum	(Plot size: 30 Ft)				Number of Domina That Are OBL, FA			2	(A)
Acer rubrum		50	Υ	FAC	That AIC OBE, I A	OW, OF TA	<i></i>		_ ` ′
		50	=Total Cover		Total Number of Do Species Across all			2	(B)
Shrub Stratum					opecies Across air	Otrata.			- (D)
Herb Stratum	(Plot size: <u>6 Ft</u>)				Percent of Dominar That Are OBL, FAC		<u>.</u>	100.0%	(A/B)
Phragmites aust	tralis	50	Υ	FACW					
Lemna sp.			N	OBL	Prevalence Index				
		60	=Total Cover		Total % Cover	of: 10	$\frac{Multipoonup}{x 1 = 0}$	ply by: 10	
Vine Stratum					OBL species			100	
					FACW species	50	_ x 2 =		
					FAC species	50	_ x 3 =_	150	
					FACU species	0	_ x 4 =_	0	
					UPL species	0	_ x 5 =_	0	
					Column Totals:	110	_(A)	260	(B)
					Prevalence Ir	ndex = B/A	=	2.36	
					Hydrophytic Vegeta	ation Indic	ators:		
					1 - Rapid Test	for Hydropl	nytic Ve	getation	
					X 2 - Dominance	Test > 50%	6		
					X 3 - Prevalence	Index ≤ 3.0)		
					Problematic Hy	drophytic \	/egetation	on (Exp	olain)
					Indicators of hydric so be present, unless dis				
					Definitions of Veget	tation Stra	ta:		
					Tree – Woody plants				
					approximately 20 ft (6 (7.6 cm) or larger in (6 m) or mo diameter at	re in hei breast l	ght and : height (E	3 in.)BH).
					Sapling – Woody pla	nts exclud	ina woo	dv vines	
					approximately 20 ft (6 than 3 in. (7.6 cm) DI	6 m) or mo			
					Shrub – Woody plant approximately 3 to 20				
					Herb – All herbaceou herbaceous vines, re plants, except woody 3 ft (1 m) in height.	gardless of	size. In	ıcludes v	voody
					Woody vine – All woo	ody vines, r	egardle	ss of hei	ght.
					Hydrophytic Vegetation Prese	nt? Yes	X	No	

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

Hydrophytic vegetation present based on dominance test and prevalence test

SOIL Sampling Point: OP-WE-WET

D	epth	l	Cole	Matrix or (moist)	%	Color (moist)		eatures Type 1			exture	Remarks
			10YR	5 / 4				1,00		SAND	<u> </u>	peat, plant fibers
6		10	10YR	4/1	100					SAND		peat, plant libers
10		20	10YR	3/1	100					SAND		
												 -
			centration, ndicators:	D=Depletion,	RM=Red	uced Martix, CS=Co	overed or	Coated	Sand Gra			re Lining, M=Matrix.
	Hist Blace Hyde Strae Org 5 cr Muc 1 cr Dep Thic Coa	ck Histic rogen S atified La anic Boo n Mucky ck Prese n Muck oleted Boo ck Dark	idion (A2) (A3) ulfide (A4) uyers (A5) dies (A6) (LR idineral (A7) ince (A8) (LFR P, ellow Dark Su Surface (A12 e Redox (A1)	(LRR P, T, U) RR U) T) urface (A11))	Polyvalue Below S Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Ma Depleted Matrix (I Redox Dark Surfa Depleted Dark Surfa Redox Depressio Marl (F10) (LRR I Depleted Ochric (I Iron-Manganese I Umbric Surface (I	e (S9) (LRI heral (F1) (httrix (F2) F3) hce (F6) hrace (F7) hs (F8) J) F11) (MLF	R S, T, U) LRR O) RA 151)		1 c 2 c Re Pie An (M Re Ve Ott	cm Muck (A9) (LRF cm Muck (A10) (LR educed Vertic (F18) edmont Floodplain iomalous Bright Loi LRA 153B) ed Parent Material (ery Shallow Dark Su ther (Explain in Ren	R S) I (outside MLRA 150A,B) Soils (F19) (LRR P, S, T) amy Soils (F20) TF2) urface (TF12) (LRR T, U) narks) phytic vegetation and wetland present,
	Sar Strip Dar	oped Mak Surface	e (S7) (LRR		:(Ł	Delta Ochric (F17 Reduced Vertic (F17 Piedmont Floodpl Anomalous Bright	- - - - 	A 150A, 15 F19) (MLR	A 149A)	A, 153C, 153D))	
		e: <u>silt</u>		2.00						Hydric S	oil Present?	Yes X No
_	Dep arks:	oth (inch	es): <u>1</u>	0-20								
			nic deposits	in bends of the	ditches. No	discerable flow; water	appears s	stagnant. G	àravel in sa	and layer consis	sts of glacially roun	ded quartz; 20% of layer.

Project/Site: Orste	d		City/County:	Ocean County Sampling Date: 5/5/2020
Applicant/Owner:	Ocean Wind - Holtec Prope	rty		State: NJ Sampling Point: WL-A-UPL
Investigators: Step	ohen Seymour	Jaclyn Chapn	nan	Section, Township, Range S T Lacey R
Landform (hillslope, ter	race, etc.): Level		Local Relief (c	concave, convex, none): None Slope(%) 0
Subregion (LRRor MLF	RA): LRR T	Lat: 39.81	0717	Long: -74.199280 Datum: WGS 1984
Soil Map Unit Name:	Psamments, 0-2% slope	<u> </u>		NWI Classification: Not mapped
·	c conditions on the site typi		of year? Yes X	No (If No, explain in Remarks)
				-
	, Soil, Hydrology			Are "Normal Circumstances" present? Yes X No
Are Vegetation	, Soil, Hydrology	, naturally pr	oblematic?	(If needed, explain any answers in Remarks.)
SUMMARY OF F	INDINGS - Attach a s	ite map sho	wing sampling poi	nt locations, transects, important features, etc.
Hydrophytic Vegetation	on Present? Yes	No X		
Hydric Soil Present?	Yes	No X	Is the Sampled Area	1
Wetland Hydrology P		No X	within a Wetland?	Yes No X
Remarks:				
HYDROLOGY				
Wetland Hydrology I	ndicators:			Secondary Indicators (minimum of two required)
Primary Indicators (mi	nimum of one is required; of	check all that app	oly)	Surface Soil Cracks (B6)
Surface Water (A1)		Aquatic Fa	auna (B13)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2	.)		osits (B15) (LRR U)	Drainage Patterns (B10)
Saturation (A3)		Hydrogen	Sulfide Odor (C1)	Moss Trim Lines (B16)
Water Marks (B1)		Oxidized F	Rhizospheres along Living Re	
Sediment Deposits (B	2)	Presence	of Reduced Iron (C4)	Crayfish Burrows (C8)
Drift Deposits (B3)		Recent Iro	n Reduction in Tilled Soils (
Algal Mat or Crust (B4	+)	Thin Muck	Surface (C7)	Geomorphic Position (D2)
Iron Deposits (B5)	(57)	Other (Ex	olain in Remarks)	Shallow Aquitard (D3)
Inundation Visible on	9 , , ,			FAC-Neutral Test (D5)
Water-Stained Leaves	s (B9)			Sphagnum moss (D8) (LRR T,U)
Field Observations:				
Surface Water Present?			h (inches):	
Water Table Present?	Yes No		h (inches):	Wetland Hydrology Present? YesNo_X_
Saturation Present?	Yes No	X Dept	h (inches):	Welland Hydrology Fresent: 163 NO_X
(includes capillary fringe Describe Recorded Data (s	e) stream gauge, monitoring well, a	aerial photos, previ	ous inspections), if available	 ::
•				
Remarks:				
No wetland hydrology pres	ent.			



/EGETATION_ 0	se scientific names of plants.	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksho		UPL	
Tree Stratum Juniperus virginia	(Plot size: <u>30 Ft</u>)	20	Y	FACU	Number of Dominant Spec That Are OBL, FACW, or		2	(A)
Pinus sylvestris		20	Y =Total Cover	NI	Total Number of Dominant Species Across all Strata:		5	(B)
Shrub Stratum	(Plot size: <u>30 Ft</u>)				Percent of Dominant Speci That Are OBL, FACW, or F		0.0%	(A/B)
Juniperus virginia Myrica pensylvan			Y	FACU FAC	Prevalence Index Worksh			
- Wiynoa pensyivan		35		-				
Harb Stratum	(5)		=Total Cover		Total % Cover of:	$\frac{\text{Multipl}}{\text{x 1 =}}$	y by: 0	
Herb Stratum	(Plot size: <u>6 Ft</u>)	20	V	EA CVA/	OBL species	x 2 =	60	
Panicum dichotor Fragaria virginian			Y	FACU	FACW species 30			
Fragalia Vilgililali	d	50			FAC species 15	x 3 =	45	
Vin a Chaptura			=Total Cover		FACU species 60	x 4 =	240	
Vine Stratum					UPL species 0	x 5 =	0	
					Column Totals: 105	(A)	345	(B)
					Prevalence Index = E	3/A= 3	3.29	
					Hydrophytic Vegetation In	dicators:		
					1 - Rapid Test for Hydr	ophytic Vege	etation	
					2 - Dominance Test >	50%		
					3 - Prevalence Index ≤	3.0		
					Problematic Hydrophyt	tic Vegetation	n (Exp	plain)
					Indicators of hydric soil and we be present, unless disturbed o		y must	
					Definitions of Vegetation S	trata:		
					Tree – Woody plants, exclud approximately 20 ft (6 m) or (7.6 cm) or larger in diamete	more in heigl	nt and	
					Sapling – Woody plants, excapproximately 20 ft (6 m) or than 3 in. (7.6 cm) DBH.			
					Shrub – Woody plants, excluapproximately 3 to 20 ft (1 to	iding woody 6 m) in heig	vines, ht.	
					Herb – All herbaceous (non- herbaceous vines, regardles plants, except woody vines, 3 ft (1 m) in height.	s of size. Inc	ludes v	woody
					Woody vine – All woody vine	es, regardless	s of he	ight.
					Hydrophytic Vegetation Present?	resI	No	X_

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

Hydrophytic vegetation not dominant and prevlance test greater than 3

SOIL Sampling Point: WL-A-UPL

	ription: (Des	Matrix	e depth ne	eded to document		eatures	contirm	the absence of Indicators.)	
Depth (inches)	Colo	(moist)	%	Color (moist)	%	Type 1	Loc ²	Texture	Remarks
0 to 6	10YR	3/2	100					ORGANIC/SANDY LOAM	
6 to 20	10YR	5/6	100					SANDY SILT	40% rounded pebbles
¹Type: C=Cor	ncentration, [D=Depletion	, RM=Red	uced Martix, CS=Co	vered or	Coated	Sand Gra	nins. ² Location: PL=Pore Lin	ing, M=Matrix.
Hydric Soil I Histosol (A Histic Epip Black Histi Hydrogen S Stratified L Organic Bo 5 cm Muck Muck Press 1 cm Muck Depleted B Thick Dark Coast Praii Sandy Muck	ndicators: 1) edon (A2) c (A3) Sulfide (A4)	R P, T, U) (LRR P, T, U) R U) T) face (A11) -) (MLRA 150 <i>A</i>		Polyvalue Below S Thin Dark Surface Loamy Mucky Mini Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surface Depleted Dark Surface Marl (F10) (LRR U Depleted Ochric (F Iron-Manganese M Umbric Surface (F	Surface (S (S9) (LRI eral (F1) (trix (F2) (3) ce (F6) fface (F7) as (F8) () () ffasses (F1) ()	8) (LRR S, R S, T, U) LRR O) RA 151) 12) (LRR C	T, U)	Indicators for Problematic 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outs Piedmont Floodplain Soils Anomalous Bright Loamy S (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface Other (Explain in Remarks) Indicators of hydrophytic hydrology must be prese unless disturbed or prob	e Hydric Soils: 3 side MLRA 150A,B) (F19) (LRR P, S, T) Soils (F20) (TF12) (LRR T, U) c vegetation and wetland ent,
	atrix (S6) ce (S7) (LRR I		d):	Reduced Vertic (F Piedmont Floodpla Anomalous Bright	ain Soils (F19) (MLR.	A 149A)	A, 153C, 153D) Hydric Soil Present?	Yes No X
Remarks:		heast of wetla	nd pit. Hydri	ic soils not present.					

Project/Site: Orsted	City/County:	Ocean County Sampling Date: 5/5/2020
Applicant/Owner: Ocean Wind - Holtec Property		State: NJ Sampling Point: WL-A-WET
Investigators: Stephen Seymour Jaclyn Cha	apman	Section, Township, Range S T Lacey R New J
Landform (hillslope, terrace, etc.):	Local Relief (d	concave, convex, none): Concave Slope(%) 0
Subregion (LRRor MLRA): LRR T Lat: 39.	810717	Long: -74.199280 Datum: WGS 1984
Soil Map Unit Name: Psamments 0-2% slopes		NWI Classification: Not mapped
Are climatic / hydrologic conditions on the site typical for this tir	me of year? Yes X	No (If No, explain in Remarks)
Are Vegetation, Soil, Hydrology, significa	ntly disturbed?	Are "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, Hydrology, naturally		(If needed, explain any answers in Remarks.)
		int locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X No Hydric Soil Present? Yes X No Wetland Hydrology Present? Yes X No Remarks: Depressional wetland dominated by fall panicum.	Is the Sampled Area within a Wetland?	Yes X No
HYDROLOGY Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that	apply)	Surface Soil Cracks (B6)
✔ High Water Table (A2) Marl D ✔ Saturation (A3) Hydrog Water Marks (B1) Oxidize Sediment Deposits (B2) Preser Drift Deposits (B3) Recen Algal Mat or Crust (B4) Thin M Iron Deposits (B5) Other Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9)	c Fauna (B13) leposits (B15) (LRR U) gen Sulfide Odor (C1) led Rhizospheres along Living R lice of Reduced Iron (C4) t Iron Reduction in Tilled Soils (fluck Surface (C7) (Explain in Remarks)	Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (C2) Crayfish Burrows (C8)
Field Observations:		
Water Table Present? Yes X No D	epth (inches): 1 epth (inches): To Surfa epth (inches): To Surfa	Wetland Hydrology Present? Yes X No
Remarks: Ponding observed. Wetland hydrology present.		



(Plot size: 30 Ft

(Plot size: 30 Ft

(Plot size: 6 Ft

Tree Stratum

Shrub Stratum

Herb Stratum

Vine Stratum

Acer rubrum

Juniperus virginiana

Myrica pensylvanica

Panicum dichotomiflorum

<u>Absolute</u>

% Cover

10

10

20

30

30

90

90

Dominant

Species

Υ

=Total Cover

=Total Cover

Υ

=Total Cover

Indicator

Status

FAC

FACU

FAC

FACW

4

75.0%

(B)

(A/B)

That Are OBL, FACW, or FAC: Prevalence Index Worksheet:

Percent of Dominant Species

Species Across all Strata:

Total % Cover	Multip	Multiply by:				
OBL species	0	x 1 =	0			
FACW species	90	x 2 =	180			
FAC species	40	x 3 =	120			
FACU species	10 x 4 =		40			
UPL species	0	x 5 =	0			
Column Totals:	140	(A)	340	(B)		
Prevalence Index = B/A= 2.43						

Hydrophytic Vegetation Indicators:

- 1 Rapid Test for Hydrophytic Vegetation
- X 2 Dominance Test > 50%
- X 3 Prevalence Index ≤ 3.0

Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes X No

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

Hydrophytic vegetation present based on dominance of species that are OBL, FACW, or FAC greater than 50% and a prevalence index less than or equal to 3.

SOIL Sampling Point: WL-A-WET

	iption: (Des	cribe to the Matrix	depth ne	eded to documen		icator or Features	confirn	the absence of Indicators.)	
Depth (inches)	Color	(moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 8	10YR	4/2	100					FINE SANDY LOAM	
8 to 20	10YR	4/2	80	10YR 4/6	20	C	M	FINE CLAY SAND	20% rounded pebbles
¹Type: C=Con	centration, D)=Depletion,	RM=Redu	ced Martix, CS=C	overed o	r Coated S	Sand Gr	ains. ² Location: PL=Pore Linir	ng, M=Matrix.
5 cm Mucky Muck Prese 1 cm Muck Depleted Be Thick Dark Coast Prair Sandy Mucl Sandy Gley Sandy Rede Stripped Ma	and the second of the second o	(LRR P, T, U) R U) Γ) face (A11)) (MLRA 150A) (LRR O, S)	[]	Polyvalue Below Thin Dark Surface Loamy Mucky Min Loamy Gleyed Matrix (Redox Dark Surface Depleted Dark Surface Marl (F10) (LRR I Depleted Ochric (Iron-Manganese I Umbric Surface (I Delta Ochric (F17 Reduced Vertic (I Piedmont Floodp Anomalous Brigh	e (S9) (LR neral (F1) (atrix (F2) F3) ace (F6) urface (F7) ns (F8) U) (F11) (MLF Masses (F F13) (LRR 7) (MLRA 1 F18) (MLR	R S, T, U) (LRR O) 12) (LRR O P, T, U) 151) A 150A, 15 F19) (MLRA	, P, T) 0B) A 149A)	Indicators for Problematic 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outsid Piedmont Floodplain Soils (F Anomalous Bright Loamy So (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (Other (Explain in Remarks) Indicators of hydrophytic whydrology must be presen unless disturbed or problemarks)	le MLRA 150A,B) 19) (LRR P, S, T) ils (F20) TF12) (LRR T, U) regetation and wetland t,
Type: Cland Depth (inch	ay nes): 9			ne depleted matrix (F	3) indicato	r		Hydric Soil Present?	Yes X No

Project/Site: C	Orsted			City/County:	Ocean County	Sampling Date	: 5/5/2020		
Applicant/Owner:	Ocean Wind -	Holtec Property			State: NJ	Sampling Point	:: WL-B-UPL		
Investigators:	Stephen Seymour	. J	Jaclyn Chapr	man	Section, Township, R	ange S T La	acey R		
Landform (hillslop	e, terrace, etc.):	Hillslope		Local Relief (c	oncave, convex, none): Concave	Slope(%) 10		
Subregion (LRRor	r MLRA): LRR T		Lat: 39.81	0893	Long: -74.200239	Datı	um: WGS 1984		
Soil Map Unit Nan	ne: Psamments	s, 0-2% slopes			NWI Cla	ssification: Not map	oped		
•	ologic conditions o	•	for this time	of year? Yes X		o, explain in Remarks	•		
_	, Soil, I				 Are "Normal Circumsta	•	,		
_			_						
Are vegetation _	, Soil, I	nydrology,	, naturally pi	obiematic?	(If needed, explain a	ny answers in Rema	rks.)		
SUMMARY C	F FINDINGS -	Attach a site	map sho	wing sampling poi	nt locations, tran	isects, importar	nt features, etc.		
Hydrophytic Veg	etation Present?	Yes N	lo X						
Hydric Soil Pres		Yes N	No X	Is the Sampled Area	Į.				
Wetland Hydrolo	ogy Present?		No X	within a Wetland?	Yes	No >	X		
Remarks:									
HYDROLOGY									
Wetland Hydrolo	ogy Indicators:				Second	ary Indicators (minim	num of two required)		
•	s (minimum of one	is required; ched	ck all that ap	ply)		urface Soil Cracks (B6)	. ,		
Surface Water (A1)		Δαμatic F	auna (B13)		parsely Vegetated Conca	ave Surface (B8)		
High Water Tab	le (A2)			osits (B15) (LRR U)	Desirence Dethoma (D40)				
Saturation (A3)				Sulfide Odor (C1)	Mo	oss Trim Lines (B16)			
Water Marks (B	1)			Rhizospheres along Living Ro	oots (C3)	ry-Season Water Table ((C2)		
Sediment Depos	` '		Presence	of Reduced Iron (C4)		rayfish Burrows (C8)			
Drift Deposits (E	•		Recent Ire	on Reduction in Tilled Soils (0	JO)	aturation Visible on Aeria	= ' '		
Algal Mat or Cru			☐ Thin Muc	k Surface (C7)		eomorphic Position (D2)	!		
Iron Deposits (B			Other (Ex	plain in Remarks)		nallow Aquitard (D3)			
	ole on Aerial Imagery (I	37)			=	AC-Neutral Test (D5)			
Water-Stained L						ohagnum moss (D8) (LR	(R T,U)		
Field Observatio	 "								
Surface Water Pre				th (inches):					
Water Table Pres				th (inches):	Wetland Hy	drology Present?	Yes No_X_		
Saturation Present (includes capillary		es No	X Dep	th (inches):		arology i resent:	163 110_ <u>X</u> _		
		nonitoring well, aeria	al photos, prev	ious inspections), if available	:				
Remarks:									
No wetland hydrolog	y present.								



VEGETATION_	Use scientific names of p	olants.			San	npling Poin	t. VVL-E	5-UPL	
		Absolute <u>%</u> Cover		Indicator Status	Dominance Test V	Vorksheet	:		
Tree Stratum Pinus resinosa	(Plot size: <u>30 Ft</u>)	30	Y	FACU	Number of Domina That Are OBL, FA			2	(A)
Prunus virginia				FACU	Total Number of Do	ominant			
Pinus sylvestri				NI	Species Across all			7	(B)
		60	=Total Cover		Derecat of Demine	nt Cnasica			
Shrub Stratum	(Plot size: 30 Ft)				Percent of Domina That Are OBL, FAC			28.6%	(A/B)
Prunus virginia	,	25	Υ	FACU	Prevalence Index	Workshee	et:		
		25	=Total Cover		Total % Cover	of:	Multi	ply by:	
Herb Stratum	(Plot size: 6 Ft)				OBL species	0	x 1 =	0	
Acer rubrum		30	Y	FAC	FACW species	10	x 2 =	20	
Juniperus virgi	niana	10	Y	FACU	FAC species	30	x 3 =	90	
Thuja occident	alis	10		FACW	FACU species	95	x 4 =	380	
		50	=Total Cover		UPL species	0	x 5 =	0	
Vine Stratum Celastrus orbio	(Plot size: <u>30 Ft</u>)	10	Υ	FACU	Column Totals:	135	(A)	490	(B)
		10	=Total Cover		Prevalence li	ndex = B/A	=	3.63	
					Hydrophytic Veget	ation Indi	cators:		
					1 - Rapid Test			getation	
					2 - Dominance	, .	•	5	
					3 - Prevalence	Index < 3	Ω		
								-	
					Problematic Hy	ydrophytic	Vegetati	on (Exp	olain)
					Indicators of hydric so be present, unless di				
					Definitions of Vege	tation Stra	ata:		
					Tree – Woody plants approximately 20 ft ((7.6 cm) or larger in	6 m) or mo	re in hei	ght and	
					Sapling – Woody pla approximately 20 ft (than 3 in. (7.6 cm) D	6 m) or mo			
					Shrub – Woody plan approximately 3 to 2				
					Herb – All herbaceou herbaceous vines, re plants, except woody 3 ft (1 m) in height.	egardless o	of size. In	cludes v	voody
					Woody vine – All wo	ody vines,	regardle	ss of he	ight.
Pomarke: (Include ph	oto numbers here or on a sepa	urate sheet \			Hydrophytic Vegetation Prese	nt? Ye	S	No	<u>x</u>

Hydrophytic vegetation not dominant based on less than 50% of species that are OBL, FACW, or FAC and prevalence index greater than 3

SOIL Sampling Point: WL-B-UPL

			ription: (De	Matrix	aeptn ne	eeded to document		icator or Features	contirm	the absence of indicators.)				
Depth (inches)		Colo	or (moist)	%	Color (moist)	%		1 Loc ²	Texture	Remarks				
0			100			-71-		FINE SANDY LOAM						
8	to		10YR	5/3	100					FINE CLAY LOAM				
18		20	10YR	2/1	100					GRANULAR BLACK	Granular coal re	esidue		
						uced Martix, CS=Co	vered or	Coated	Sand Gra	ins. ² Location: PL=Pore Linir	ng, M=Matrix.			
Ну	dric	c Soil	Indicators:			Polyvalue Below S	Surface (S	9) /I DD C	T II)	Indicators for Problematic I	Hydric Soils: 3			
		tosol (A	•			Thin Dark Surface			1,0)	1 cm Muck (A9) (LRR O)				
H			edon (A2)			Loamy Mucky Min	eral (F1) (LRR O)		2 cm Muck (A10) (LRR S)				
		ıck Histi	. ,			Loamy Gleyed Ma	trix (F2)			Reduced Vertic (F18) (outsid	le MLRA 150A,B)			
H			Sulfide (A4)			Depleted Matrix (F				☐ Piedmont Floodplain Soils (F	19) (LRR P, S, T)			
			ayers (A5) odies (A6) (LR	R P, T, U)		Redox Dark Surface	•			Anomalous Bright Loamy So (MLRA 153B)	ils (F20)			
) (LRR P, T, U)		Depleted Dark Sui	face (F7)			Red Parent Material (TF2)				
	Mu	ck Pres	ence (A8) (LR	RU)		Redox Depression	ıs (F8)			Very Shallow Dark Surface (TF12) (LRR T, U)			
	1 c	m Muck	(A9) (LRR P,	T)		Marl (F10) (LRR U	J)			Other (Explain in Remarks)				
Ц		•	Below Dark Su	, ,		Depleted Ochric (F	- -11) (MLR	RA 151)		³ Indicators of hydrophytic v	regetation and wetlar	ad		
			Surface (A12	•		Iron-Manganese M	lasses (F⁴	12) (LRR C), P. T)	hydrology must be presen	nt,	iu		
	Coast Prairie Redox (A16) (MLRA 150A) Sandy Mucky Mineral (S1) (LRR O, S)				Umbric Surface (F	•		, , ,	unless disturbed or proble	matic.				
Н		-	yed Matrix (S4			Delta Ochric (F17)		•						
П		-	lox (S5)	·)		Reduced Vertic (F	•		50B)					
		-	atrix (S6)			Piedmont Floodpla			•					
	Daı	rk Surfa	ce (S7) (LRR	P, S, T, U)		Anomalous Bright	•		•	4 153C 153D)				
	1							5110 (1 20) (1, 1000, 1002)				
Ш	Re	estric	ive Layer	(if observed	d):									
	Тур									Hydric Soil Present?	Yes No	X		
_		pth (inc	nes):											
	ıarks ıyer c		esidue (black,	granular) encou	ıntered at	18-20" below ground su	rface. No	hydric soil	s present d	ue to not meeting any indicator criteria.				

Project/Site: Orsted		City/County:	Ocean County	Sampling Date: 8/10/2020
Applicant/Owner: Ocean Wir	nd - Holtect Property		State: NJ	Sampling Point: WL-B-WET2
Investigators: Zak Lehmann	Jaclyn Chap	oman :	Section, Township, Ran	ige S T Lacey R
Landform (hillslope, terrace, etc.)	: Level	Local Relief (co	oncave, convex, none):	Concave Slope(%) 0
Subregion (LRRor MLRA): LRR	RT Lat: 39.8	10737 I	_ong: -74.200351	Datum: WGS 1984
Soil Map Unit Name: Psamm	nents, 0-2% slopes		NWI Classi	fication: None
Are climatic / hydrologic condition	ns on the site typical for this time	e of year? Yes X	No (If No, e	explain in Remarks)
Are Vegetation, Soil	, Hydrology, significant	ly disturbed?	re "Normal Circumstan	ces" present? Yes X No
Are Vegetation, Soil	_, Hydrology, naturally p	problematic?	(If needed, explain any	answers in Remarks.)
SUMMARY OF FINDING	S - Attach a site map sh	owing sampling poin	t locations, trans	ects, important features, etc.
Hydrophytic Vegetation Presen	t? Yes X No			
Hydric Soil Present?	Yes X No	Is the Sampled Area within a Wetland?		
Wetland Hydrology Present?	Yes X No	within a wettand?	Yes	X No
HYDROLOGY				
Wetland Hydrology Indicators Primary Indicators (minimum of		pply)		y Indicators (minimum of two required) ace Soil Cracks (B6)
✓ Surface Water (A1) ✓ High Water Table (A2) ✓ Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Image Water-Stained Leaves (B9)	Marl Dep Hydroge Oxidized Presence Recent I Thin Mu	Fauna (B13) posits (B15) (LRR U) In Sulfide Odor (C1) I Rhizospheres along Living Roce of Reduced Iron (C4) Iron Reduction in Tilled Soils (Cock Surface (C7) Ixplain in Remarks)	Spars	sely Vegetated Concave Surface (B8) nage Patterns (B10) s Trim Lines (B16) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imag.(C9) morphic Position (D2) low Aquitard (D3) -Neutral Test (D5) agnum moss (D8) (LRR T,U)
Field Observations:				
Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (stream gauge	Yes X No Deposition Yes X No Deposition	oth (inches): oth (inches): To surface oth (inches): To surface vious inspections), if available:	Motland Usdra	ology Present? Yes _X_ No
Remarks: Wetland hydrology present				



Tree Stratum		Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A			
Shrub Stratum					
Herb Stratum (Plot size: _6 Ft)		Total Number of Dominant Species Across all Strata: 1 (B)			
Phragmites australis	100 Y FAC	` <i></i> `			
	100 =Total Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/I			
Vine Stratum		Prevalence Index Worksheet:			
		Total % Cover of: Multiply by:			
		OBL species $0 \times 1 = 0$			
		FACW species 100 x 2 = 200			
		FAC species 0 x 3 = 0			
		FACU species0 x 4 =0			
		UPL species 0 x 5 = 0			
		Column Totals: 100 (A) 200 (B			
		Prevalence Index = B/A= 2.00			
		Hydrophytic Vegetation Indicators:			
		1 - Rapid Test for Hydrophytic Vegetation			
		X 2 - Dominance Test > 50%			
		X 3 - Prevalence Index ≤ 3.0			
		Problematic Hydrophytic Vegetation (Explain			
		Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			
		Definitions of Vegetation Strata:			
		Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH)			
		Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.			
		Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.			
		Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes wood plants, except woody vines, less than approximately 3 ft (1 m) in height.			
		Woody vine – All woody vines, regardless of height.			
		Hydrophytic Vegetation Present? Yes X No			
Remarks: (Include photo numbers here or on a separate sheet.)					

% Cover

Species

<u>Status</u>

SOIL Sampling Point: WL-B-WET2

Profile Desc	ription: (Des	cribe to the	depth n	eeded to documen	t the inc	licator or	confirm	the absence of Indicators.)	
Depth		Matrix				Features			
(inches)	Colo	r (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 4	10YR	2/1	100		70	CS	М	SANDY CLAY	Fibrous black muck; 70% particles masked with organic
4 to 20	10YR	5 / 2	100		70	CS	M	SANDY CLAY	70% particles masked with organic
¹Type: C=Co	ncentration, [D=Depletion,	RM=Red	duced Martix, CS=Co	overed o	r Coated	Sand Gra	ains. ² Location: PL=Pore Lini	ng, M=Matrix.
Black His Hydrogen Stratified Organic E 5 cm Muc Muck Pre 1 cm Muc Depleted Thick Dar	pedon (A2)	(LRR P, T, U) R U) T) face (A11))	Polyvalue Below S Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Ma Depleted Matrix (f Redox Dark Surfa Depleted Dark Su Redox Depression Marl (F10) (LRR U Depleted Ochric (Iron-Manganese N	e (S9) (LF heral (F1) htrix (F2) 	RR S, T, U) (LRR O)) RA 151)		Indicators for Problematic 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outsic Piedmont Floodplain Soils (I Anomalous Bright Loamy So (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (Other (Explain in Remarks) Indicators of hydrophytic hydrology must be presei unless disturbed or proble	de MLRA 150A,B) F19) (LRR P, S, T) pils (F20) (TF12) (LRR T, U) vegetation and wetland
Sandy Mu Sandy Gl Sandy Re Stripped I Dark Surf	acky Mineral (S1 eyed Matrix (S4) dox (S5) Matrix (S6) ace (S7) (LRR F) (LRR O, S)) P, S, T, U)		Umbric Surface (F Delta Ochric (F17 Reduced Vertic (F Piedmont Floodpl Anomalous Bright) (MLRA 18) (MLF ain Soils	151) RA 150A, 19 (F19) (MLR	A 149A)		Yes X No
Remarks:	dicators present								

	City/County: Ocean	County Sampling Date: 8/10/2020
Holtec Property		State: NJ Sampling Point: WL-C-UP
Jaclyn Cha	pman Sectio	n, Township, Range S T Lacey R
Level	Local Relief (concave	e, convex, none): None Slope(%) 0
Lat: 39.	810631 Long:	-74.201509 Datum: WGS 1984
s, 0-2% slopes		NWI Classification: Not mapped
on the site typical for this tir	ne of year? Yes X No	(If No, explain in Remarks)
Hydrology, significa	ntly disturbed? Are "No	ormal Circumstances" present? Yes X No
	n na hi a na ati a O	· · · · · · · · · · · · · · · · · · ·
	(11 110)	eded, explain any answers in Remarks.) eations, transects, important features, etc.
Yes No X		
	Is the Sampled Area	
	within a Wetland?	Yes No X
103100 _X		
or nydiophydio vegetation,	solis, and wettand hydrology	
is required; check all that	apply)	Secondary Indicators (minimum of two required) Surface Soil Cracks (B6)
Aquatio	Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
		Drainage Patterns (B10)
		Moss Trim Lines (B16)
Oxidize	d Rhizospheres along Living Roots (C3	
Presen	ce of Reduced Iron (C4)	Crayfish Burrows (C8)
Recent	Iron Reduction in Tilled Soils (C6)	Saturation Visible on Aerial Imag.(C9)
☐ Thin M	uck Surface (C7)	Geomorphic Position (D2)
	Explain in Remarks)	Shallow Aquitard (D3)
В7)		FAC-Neutral Test (D5) Sphagnum moss (D8) (LRR T,U)
		Spriagrium moss (Do) (ERR 1,0)
na Na V D	anth (inches).	
	epth (inches):	
es No X D	epth (inches):	Wetland Hydrology Present? Yes No_X_
es No X D		Wetland Hydrology Present? Yes No_X_
	Level Lat: 39.0 s, 0-2% slopes In the site typical for this time thydrology, significant thydrology, naturally the site map shape	Jaclyn Chapman Section



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

No hydric vegetation dominance

Yes

Χ

No

Hydrophytic **Vegetation Present?** SOIL Sampling Point: WL-C-UP

Depth	iption. (Des	Matrix	аеріп пее	ded to documen		eatures	Commi	the absence of indicators.)	
(inches)	Colo	r (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 20	10YR	5 / 1	60	10YR2/1	40	С	М	SAND	
		D=Depletion,	RM=Reduc	ced Martix, CS=Co	overed or	Coated	Sand Gra		
Hydric Soil I Histosol (A				Polyvalue Below	Surface (S	8) (LRR S,	T, U)	Indicators for Problematic H	<u>lydric Soils:</u> ³
Histic Epipe Black Histie Hydrogen S Stratified Le Organic Bo 5 cm Muck Muck Prese 1 cm Muck Depleted B Thick Dark Coast Prain	edon (A2) c (A3) Sulfide (A4) ayers (A5) dies (A6) (LRF y Mineral (A7) ence (A8) (LRR (A9) (LRR P, elow Dark Sur Surface (A12)	(LRR P, T, U) R U) T) face (A11) b) (MLRA 150A)) (LRR O, S)		Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Ma Depleted Matrix (I Redox Dark Surfa Depleted Dark Su Redox Depression Marl (F10) (LRR U Depleted Ochric (Iron-Manganese N Umbric Surface (F17	neeral (F1) (atrix (F2) F3) ace (F6) urface (F7) ns (F8) J) F11) (MLF Masses (F- F13) (LRR	LRR O) RA 151) 12) (LRR C), P, T)	1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outside Piedmont Floodplain Soils (F1 Anomalous Bright Loamy Soil (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (T Other (Explain in Remarks) 3 Indicators of hydrophytic ve hydrology must be present unless disturbed or probler	19) (LRR P, S, T) Is (F20) F12) (LRR T, U) egetation and wetland
Sandy Red	ox (S5)			Reduced Vertic (F	-18) (MLR	A 150A, 15	60B)		
Stripped M	` '			Piedmont Floodpl	ain Soils (F19) (MLR.	A 149A)		
Dark Surfa	ce (S7) (LRR F	P, S, T, U)		Anomalous Bright	t Loamy So	oils (F20) (MLRA 149	9A, 153C, 153D)	
Restrict Type: Depth (inch		if observed	l): 					Hydric Soil Present?	Yes No X
No hydric soils									

Project/Site: Orsted		City/County: Oce	ean County Sa	ampling Date: 5/5/2020
Applicant/Owner: Ocean Wind - Ho	oltec Property		State: NJ Sa	mpling Point: WL-C-WET
Investigators: Stephen Seymour	Jaclyn Chapr	man Sec	tion, Township, Range S	T Lacey R
Landform (hillslope, terrace, etc.):	Hillslope	Local Relief (conca	ave, convex, none): Cond	cave Slope(%) 5
Subregion (LRRor MLRA): LRR T	Lat: 39.81	0860 Lon	g: -74.200654	Datum: WGS 1984
Soil Map Unit Name: Psamments,	0-2% slope		NWI Classificatio	n: Not mapped
Are climatic / hydrologic conditions on	the site typical for this time	of year? Yes X No	o (If No, explain	ı in Remarks)
Are Vegetation, Soil, Hy	drology, significantly	y disturbed? Are "	'Normal Circumstances" p	present? Yes X No
Are Vegetation, Soil, Hy		blamatia0	needed, explain any answ	
SUMMARY OF FINDINGS - A		(,
Hydrophytic Vegetation Present?	Yes X No			
Hydric Soil Present?	Yes X No	Is the Sampled Area within a Wetland?		
Wetland Hydrology Present?	Yes X No	within a wettand?	Yes X	No
HYDROLOGY				
Wetland Hydrology Indicators:			Secondary Indic	cators (minimum of two required)
Primary Indicators (minimum of one is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	Aquatic For Marl Depri	auna (B13) osits (B15) (LRR U) Sulfide Odor (C1) Rhizospheres along Living Roots (Sparsely Ve	Water Table (C2)
Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9)	Recent Iro Thin Muc	of Reduced Iron (C4) on Reduction in Tilled Soils (C6) k Surface (C7) cplain in Remarks)	Saturation \ Geomorphic Shallow Aqu	Visible on Aerial Imag.(C9) C Position (D2) uitard (D3)
Field Observations:				
Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, more	X No Dept	th (inches): th (inches): Surface th (inches): Surface rious inspections), if available:	Wetland Hydrology	Present? Yes X No
Remarks: Wetland hydrology present				



VEGETATION_ U	se scientific	c names of plants.				Samplin	ig Point:	WL-C-	WET	
			Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worl	ksheet:			
Tree Stratum Acer rubrum	(Plot size:	30 Ft)	60	Y	FAC	Number of Dominant S That Are OBL, FACW			5	(A)
			60	=Total Cover	TAC	Total Number of Domir Species Across all Stra			5	(B)
Shrub Stratum	(Plot size:	30 Ft)								
Clethra alnifolia Acer rubrum				Y	FACW	Percent of Dominant S That Are OBL, FACW,		10	0.0%	(A/B)
			90	=Total Cover		Prevalence Index Wo	rksheet:			
Herb Stratum	(Plot size:	6 Ft)		Total Gover		Total % Cover of:		Multiply	y by:	
Phragmites austr	•	,	40	Υ	FACW	OBL species	0	x 1 =	0	
Onoclea sensibili	S		20	Y	FACW	FACW species	130	x 2 =	260	
			60	=Total Cover		FAC species	80	x 3 =	240	
Vine Stratum	(Plot size:	30 Ft)				FACU species	1 :	x 4 =	4	
Toxicodendron pu	-		1	N	FACU	UPL species	0	x 5 =	0	
			1	=Total Cover		Column Totals:	211 (/	A)	504	(B)
						Prevalence Index	c = B/A=	2	2.39	
						Hydrophytic Vegetatio	n Indicat	ors:		
						1 - Rapid Test for I	-lydrophy ¹	tic Vege	tation	
						X 2 - Dominance Tes		_		
						X 3 - Prevalence Inde	ex < 3 N			
								getation	ı (Exn	olain)
						Problematic Hydrophytic Vegetation (Explain) Indicators of hydric soil and wetland hydrology must			,	
						be present, unless disturb	ed or probl	lematic.		
						Definitions of Vegetation	on Strata:	:		
						Tree – Woody plants, ex approximately 20 ft (6 m) (7.6 cm) or larger in diam) or more	in heigh	nt and 3	
						Sapling – Woody plants, approximately 20 ft (6 m) than 3 in. (7.6 cm) DBH.	or more			
						Shrub – Woody plants, e approximately 3 to 20 ft (
						Herb – All herbaceous (n herbaceous vines, regard plants, except woody vin 3 ft (1 m) in height.	dless of s	ize. Incl	udes v	voody
						Woody vine – All woody	vines, reç	gardless	of hei	ght.
						Hydrophytic Vegetation Present?	Yes _	X N	lo	
emarks: (Include nhot	o numbers hei	re or on a separate sheet)							

Hydrophytic vegetation present based on dominance of species that are OBL, FACW, or FC greater than 50% and a prevalence index less than or equal to 3.

SOIL Sampling Point: WL-C-WET

Profile Desci	ription: (Des		depth ne	eded to document			confirm	the absence of Indicators.)	
Depth		Matrix				eatures			
(inches)	Color	r (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 9	10YR	4 / 1	100					ORGANIC LOAM	Plant roots, 20% sand
9 to 20	10YR	3 / 1	100					SANDY CLAY	Very soft saturated sand with clay
¹Type: C=Cor	ncentration, [D=Depletion,	, RM=Redu	uced Martix, CS=Co	vered or	Coated	Sand Gra	ains. ² Location: PL=Pore Lini	ng, M=Matrix.
Stratified L Organic Bo 5 cm Muck Muck Pres 1 cm Muck Depleted B	edon (A2) c (A3) Sulfide (A4) ayers (A5) odies (A6) (LRF y Mineral (A7) ence (A8) (LRR (A9) (LRR P,	(LRR P, T, U) R U) T) face (A11)	 	Polyvalue Below S Thin Dark Surface Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surface Depleted Dark Surface Redox Depression Marl (F10) (LRR U Depleted Ochric (F	(S9) (LRI eral (F1) (trix (F2) (F3) ce (F6) rface (F7) ns (F8)	R S, T, U) LRR O)	., .,	1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outside Piedmont Floodplain Soils (Figure 1997) Anomalous Bright Loamy Sot (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (Figure 1997) Other (Explain in Remarks) 3 Indicators of hydrophytic 1997	F19) (LRR P, S, T) pils (F20) TF12) (LRR T, U)
Coast Prai Sandy Muc Sandy Gle Sandy Rec Stripped M Dark Surfa	atrix (S6) ce (S7) (LRR F	e) (MLRA 150A) (LRR O, S)) P, S, T, U)	[[[Iron-Manganese M Umbric Surface (F Delta Ochric (F17) Reduced Vertic (F Piedmont Floodpla Anomalous Bright	Masses (F 13) (LRR) (MLRA 1 18) (MLR ain Soils (I	12) (LRR C P, T, U) 51) A 150A, 15 F19) (MLR	0B) A 149A)	hydrology must be preser unless disturbed or proble	nt,
Remarks:	nic material fo	und within the	first 9 in of t	he soil profile. Hydric s	oils prese	nt based o	n soils me	eting criteria for the Histic Epipedon (A2) indicator.
·									

Project/Site: Orsted			City/County:	Ocean County Sampling Date: 8/10/2020
Applicant/Owner: Oce	an Wind - JCP&L	Property		State: NJ Sampling Point: WL-D-UP
Investigators: Zak Lei	nmann	Jacly	n Chapman	Section, Township, Range S T Lacey R
Landform (hillslope, terrac	e, etc.):	_evel	Local Reli	ef (concave, convex, none): None Slope(%) 0
Subregion (LRRor MLRA)	IRR T	Lat	39.810493	Long: -74.200617 Datum: WGS 1984
,			, frequently flooded	NWI Classification: Not mapped
· —		•		
Are climatic / hydrologic c				X No (If No, explain in Remarks)
Are Vegetation, S	oil, Hydrolo	gy, sig	nificantly disturbed?	Are "Normal Circumstances" present? Yes X No
Are Vegetation, Se	oil, Hydrolo	gy, na	urally problematic?	(If needed, explain any answers in Remarks.)
SUMMARY OF FINI	DINGS - Attac	h a site ma	p showing sampling	point locations, transects, important features, etc.
				•
Hydrophytic Vegetation			Is the Sampled	Area
Hydric Soil Present?	Yes	No _	× within a Wetland	
Wetland Hydrology Pres	ent? Yes	No	X	
HYDROLOGY				
Wetland Hydrology Indipersional Primary Indicators (minim		iired; check al	that apply)	Secondary Indicators (minimum of two required) Surface Soil Cracks (B6)
Surface Water (A1)			Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)			Marl Deposits (B15) (LRR U)	☐ Drainage Patterns (B10)
Saturation (A3)			Hydrogen Sulfide Odor (C1)	Moss Trim Lines (B16)
Water Marks (B1)			Oxidized Rhizospheres along Livir	ng Roots (C3)
Sediment Deposits (B2) Drift Deposits (B3)			Presence of Reduced Iron (C4)	Saturation Visible on Aerial Imag (CO)
Algal Mat or Crust (B4)			Recent Iron Reduction in Tilled So	oils (C6) Geomorphic Position (D2)
Iron Deposits (B5)			Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aeri	ial Imagery (B7)		Other (Explain in Remarks)	FAC-Neutral Test (D5)
Water-Stained Leaves (B				Sphagnum moss (D8) (LRR T,U)
				Springfram mose (BS) (E. W. 1,8)
Field Observations: Surface Water Present?	Yes	No. V	Donth (inches):	
Water Table Present?	Yes	NoX NoX	Depth (inches): Depth (inches):	
Saturation Present?	Yes	No X	Depth (inches):	Wetland Hydrology Present? Yes No X
(includes capillary fringe)	. 55			
	am gauge, monitorino	g well, aerial pho	otos, previous inspections), if avai	lable:
Remarks:				
No wetland hydrology present				
Tro Woulding Tryal ology procont				



	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet:
<u>Tree Stratum</u> (Plot size: 30 Ft)			· <u></u>	Number of Dominant Species That Are OBL FACW or FAC: 2 (A)
Juniperus virginiana	20	Υ	FACU	That Are OBL, FACW, or FAC: 2 (A)
	20	=Total Cover		Total Number of Dominant
Shrub Stratum (Plot size: 30 Ft)		_		Species Across all Strata: 5 (B)
Juniperus virginiana	5	Υ	FACU	Percent of Dominant Species 40.0% (A/B)
Myrica pensylvanica	5	Υ	FAC	That Are OBL, FACW, or FAC:
Acer rubrum	1	N	FAC	Prevalence Index Worksheet:
Pinus rigida	1	N	FACU	Total % Cover of: Multiply by:
	12	=Total Cover		OBL species $0 x 1 = 0$
Herb Stratum (Plot size: 6 Ft)				FACW species 70 x 2 = 140
Phragmites australis	60	Υ	FACW	FAC species 7 x 3 = 21
Solidago sempervirens	10	N	FACW	07 × 4 - 400
Polygonum achoreum	1	N	FAC	TACO species
	71	=Total Cover		Of L species
Vine Stratum (Plot size: _30 Ft)				Column Totals: 104 (A) 269 (B)
Rubus idaeus	1	Y	FACU	Prevalence Index = B/A= 2.59
	1	=Total Cover		Hydrophytic Vegetation Indicators:
				1 - Rapid Test for Hydrophytic Vegetation
				2 - Dominance Test > 50%
				X 3 - Prevalence Index ≤ 3.0
				Problematic Hydrophytic Vegetation (Explain)
				Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Definitions of Vegetation Strata:
				Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.
				Woody vine – All woody vines, regardless of height.
Remarks: (Include photo numbers here or on a separate shee	+)			Hydrophytic Vegetation Present? Yes X No

Hydric vegetation present based on prevalence index alone

SOIL Sampling Point: WL-D-UP

Depth	iiptioli. (Des	Matrix	ериі пее	ded to document		Features	confirm t	he absence of Indicators.)	
(inches)	Colo	r (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 10	10YR	4/3						SANDY LOAM	
¹Type: C=Cor	ncentration, I	D=Depletion, F	RM=Reduc	ced Martix, CS=Co	vered o	r Coated S	Sand Grain	ns. ² Location: PL=Pore Lini	ng, M=Matrix.
Stratified Long Stratified Long Stratified Long Stratified Long Stratified Boundary Stratified Long Stratified Boundary Stratified Long Strati	edon (A2) c (A3) Sulfide (A4) ayers (A5) odies (A6) (LRI cy Mineral (A7) ence (A8) (LRI c (A9) (LRR P, delow Dark Sur s Surface (A12)	(LRR P, T, U) R U) T) face (A11)		Polyvalue Below S Thin Dark Surface Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surface Depleted Dark Surface Redox Depression Marl (F10) (LRR U Depleted Ochric (F Iron-Manganese M	(S9) (LR eral (F1) trix (F2) (S3) (Ce (F6) (Face (F7) (Face (F8) (F11) (MLF	R S, T, U) (LRR O) RA 151)		Indicators for Problematic I 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outsic I Piedmont Floodplain Soils (FI) Anomalous Bright Loamy Soil (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (IIII IIII IIII IIII IIII IIII IIII I	de MLRA 150A,B) F19) (LRR P, S, T) oils (F20) TF12) (LRR T, U) vegetation and wetland
Sandy Muc Sandy Gley Sandy Red Stripped M Dark Surfa	cky Mineral (S1 yed Matrix (S4 dox (S5) latrix (S6) cce (S7) (LRR I) (LRR O, S))	[[[[Umbric Surface (F Delta Ochric (F17) Reduced Vertic (F Piedmont Floodpla Anomalous Bright	(MLRA 1 18) (MLR ain Soils (151) A 150A, 15 F19) (MLR/	A 149A)	·	mauc.
Type: Fi	ill							Hydric Soil Present?	Yes No X
Remarks:								l.	
Restrictive laye	er at 10 inches	; no inclusions o	r concretion	s					

Project/Site: Orsted		City/County:	Ocean County	Sampling Date: 8/10/2020
Applicant/Owner: Ocean Win	nd - Holtec Property		State: NJ	Sampling Point: WL-D-WET
Investigators: Zak Lehmann	Jaclyn Chap	oman	Section, Township, Rar	nge S T Lacey R
Landform (hillslope, terrace, etc.): Toe of Slope	Local Relief	(concave, convex, none):	Concave Slope(%) 0
Subregion (LRRor MLRA): LRF	RT Lat: 39.8	10428	Long: -74.200485	Datum: WGS 1984
Soil Map Unit Name: Manah	awkin muck, 0 2 percent slopes	, frequently flooded	NWI Class	ification: PSS1Eh
Are climatic / hydrologic conditio	ns on the site typical for this tim	e of year? Yes X	No (If No, e	explain in Remarks)
Are Vegetation, Soil	, Hydrology, significan	tly disturbed?	Are "Normal Circumstan	ices" present? Yes X No
Are Vegetation, Soil	-	-		answers in Remarks.)
SUMMARY OF FINDING	S - Attach a site map sh	owing sampling po	int locations, trans	ects, important features, etc.
Hydrophytic Vegetation Presen	it? Yes X No			
Hydric Soil Present?	Yes X No	Is the Sampled Are	ea	
Wetland Hydrology Present?	Yes X No	within a Wetland?	Yes	X No
The area is a welland based on	dominance of hydrophytic vege	tation and presence of m	yunc sons and welland ny	urology
HYDROLOGY				
Wetland Hydrology Indicators Primary Indicators (minimum of		pply)		y Indicators (minimum of two required) ace Soil Cracks (B6)
Surface Water (A1)	Aquatic	Fauna (B13)	= '	sely Vegetated Concave Surface (B8)
✓ High Water Table (A2)	☐ Marl De	posits (B15) (LRR U)		nage Patterns (B10)
Saturation (A3)	Hydroge	n Sulfide Odor (C1)		s Trim Lines (B16)
Water Marks (B1)		Rhizospheres along Living R	10013 (00)	Season Water Table (C2)
Sediment Deposits (B2)		e of Reduced Iron (C4)	Cott	fish Burrows (C8) ration Visible on Aerial Imag.(C9)
Drift Deposits (B3) Algal Mat or Crust (B4)		ron Reduction in Tilled Soils	(00)	morphic Position (D2)
Iron Deposits (B5)		ck Surface (C7)		low Aquitard (D3)
Inundation Visible on Aerial Imag		explain in Remarks)		-Neutral Test (D5)
Water-Stained Leaves (B9)	o.y (o.)		_	agnum moss (D8) (LRR T,U)
Field Observations:				
Surface Water Present?	Yes X No De	pth (inches): 2		
Water Table Present?		pth (inches):		
Saturation Present?	Yes No _X _ De	pth (inches):	Wetland Hydro	ology Present? Yes X No
(includes capillary fringe)		uiana iaana akiana Vifanaliah	1	
Describe Recorded Data (stream gaug	ge, monitoring well, aerial photos, pre	vious inspections), if availab	e:	
Remarks:				
Standing water in the soil pit location;	wetland hydrology present			



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

Hydrophytic vegetation present

Yes X

No

Hydrophytic **Vegetation Present?** SOIL Sampling Point: WL-D-WET

Depth	cription: (Des	Matrix	aeptn ne	eded to documen		Features	Commi	the absence of Indicators.)	
(inches)	Colo	r (moist)	%	Color (moist)	%	Type 1	Loc ²	Texture	Remarks
0 to 8	10YR	2/1	100		70	CS	М	SAND	Fibrous muck; 70% particles masked with organic
8 to 20	10YR	4 / 1	100		70	CS	M	SAND	Fibrous muck; 70% of particles masked with organic
¹Type: C=C	oncentration, l	D=Depletion,	RM=Redu	uced Martix, CS=Co	overed o	r Coated	Sand Gra	ains. ² Location: PL=Pore I	Lining, M=Matrix.
Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) (LRR P, T, U) 5 cm Mucky Mineral (A7) (LRR P, T, U) Muck Presence (A8) (LRR U) 1 cm Muck (A9) (LRR P, T) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Coast Prairie Redox (A16) (MLRA 150A) Sandy Mucky Mineral (S1) (LRR O, S) Sandy Gleyed Matrix (S4) Sandy Redox (S5)				Polyvalue Below S Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Ma Depleted Matrix (I Redox Dark Surface Depleted Dark Surface Redox Depression Marl (F10) (LRR U Depleted Ochric (Iron-Manganese I) Umbric Surface (F	e (S9) (LR heral (F1) atrix (F2) =3) ace (F6) urface (F7) ns (F8) J) F11) (MLF	R S, T, U) (LRR O) RA 151)		Indicators for Problema 1 cm Muck (A9) (LRR O 2 cm Muck (A10) (LRR S Reduced Vertic (F18) (o Piedmont Floodplain Soi Anomalous Bright Loam (MLRA 153B) Red Parent Material (TF Very Shallow Dark Surfa Other (Explain in Remar	utside MLRA 150A,B) ils (F19) (LRR P, S, T) y Soils (F20) 2) ice (TF12) (LRR T, U) ks) ytic vegetation and wetland esent,
Sandy G Sandy R Stripped Dark Sur	eyed Matrix (S4 edox (S5) Matrix (S6) face (S7) (LRR I	P, S, T, U)	d):	Delta Ochric (F17 Reduced Vertic (F Piedmont Floodpl Anomalous Bright	-18) (MLR ain Soils (A 150A, 19 F19) (MLF	A 149A)	PA, 153C, 153D) Hydric Soil Present?	Yes X No
Remarks:									

Road side	aclyn Chapman Lat: 39.808934 for this time of year	Local Relief (conc	State: NJ Sampling Point: WL-E-UPL ction, Township, Range S T Lacey R cave, convex, none): Concave Slope(%) 5 ng: -74.198696 Datum: WGS 1984 NWI Classification: None	
Road side R T ents, 0-2% slope ens on the site typical	Lat: 39.808934	Local Relief (conc	rave, convex, none): Concave Slope(%) 5 ng: -74.198696 Datum: WGS 1984	
R T nents, 0-2% slope ns on the site typical t			ng: -74.198696 Datum: WGS 1984	
nents, 0-2% slope		Lor		
ns on the site typical	for this time of year		NWI Classification: None	
ns on the site typical	for this time of year			
	,	? Yes X N	lo (If No, explain in Remarks)	
	significantly distur		"Normal Circumstances" present? Yes X No	
, Hydrology, , Hydrology,		4:-0	·	
		(11	needed, explain any answers in Remarks.)	
S - Attach a site	map showing	sampling point	<u>locations, transects, important features, etc</u>).
t? Yes N	o X			
Yes N				
Yes N	WIL	nin a welland?	Yes No X	
	<u> </u>			
: one is required; chec	_	13)	Secondary Indicators (minimum of two required Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8)	d)
	_ '	· ·	Drainage Patterns (B10)	
!	Hydrogen Sulfide	Odor (C1)	Moss Trim Lines (B16)	
	Oxidized Rhizospl	neres along Living Roots	(03)	
,				
ļ		, ,		
erv (B7)	Uther (Explain in	Remarks)		
, ()			Sphagnum moss (D8) (LRR T,U)	
Yes No	X Depth (inche	s):		
		•		
Yes No	X Depth (inche	s):	Wetland Hydrology Present? Yes No_X	X
1	t? YesN YesN YesN presence of hydrophy : one is required; checo ery (B7) YesNo YesNo YesNo	t? Yes No X Is t with Yes No X No X Ves No X Depth (inche Yes No X Depth (inche Yes No X Depth (inche No X Dept	Is the Sampled Area within a Wetland? Yes	Yes



		Absolute % Cover	<u>Dominant</u> <u>Species</u>	Indicator Status	Dominance Test V				
·	Plot size: <u>30 Ft</u>)	30	V	FACW	Number of Domina That Are OBL, FA			2	(<i>A</i>
Quercus palustris Pinus resinosa		20	- Y Y	FACU	Total Number of Do	minant			
Prunus virginiana			- <u>Y</u>	FACU	Species Across all			9	(В
Sassafras albidum			- <u>'</u>	FACU					_ `
Acer rubrum		10	N	FAC	Percent of Dominal That Are OBL, FAC			22.2%	(A
		100	=Total Cover		Prevalence Index	Workshee	et:		
Shrub Stratum (F	Plot size: _30 Ft)				Total % Cover	of:	Multi	ply by:	
Clethra alnifolia		30	Υ	FACW	OBL species	0	x 1 =	0	
		30	=Total Cover			60	x 2 =	120	
erb Stratum (F	Plot size: 6 Ft)				FACW species FAC species	10	x 3 =	30	
Fragaria virginiana		20	Y	FACU	FACU species	116	x 4 =	464	
Artemisia annua		10	Υ	FACU		0	x 5 =	0	
Juniperus virginiana		10	Υ	FACU	UPL species		_		,-
in a Otraction		40	=Total Cover		Column Totals:	186	(A)	614	(I
·	Plot size: _30 Ft)				Prevalence Ir	ndex = B/A	\=	3.30	
Celastrus orbiculatus		15	Y	FACU	Hydrophytic Veget	ation Indi	cators:		
Parthenocissus quinqu	iefolia	1	N	FACU	1 - Rapid Test			aetation	
		16	=Total Cover		l — ·	, ,	,	getation	
				2 - Dominance	Test > 50	%			
					3 - Prevalence	Index ≤ 3.	0		
					Problematic Hy	/drophytic	Vegetatio	on (Ex	olaii
					Indicators of hydric so		Ū	` '	o i di i
					be present, unless di	sturbed or p	roblematio). 	
					Definitions of Vege	tation Stra	ata:		
					Tree – Woody plants approximately 20 ft ((7.6 cm) or larger in o	6 m) or mo	re in hei	ght and	3 ir OBH
					Sapling – Woody pla approximately 20 ft (than 3 in. (7.6 cm) D	6 m) or mo			
					Shrub – Woody plant approximately 3 to 20				
					Herb – All herbaceou herbaceous vines, re plants, except woody 3 ft (1 m) in height.	gardless o	of size. In	cludes	woo
					Woody vine – All woo	ody vines,	regardle	ss of he	ight
					Hydrophytic Vegetation Prese	nt? Ye:	S	No	X

Hydric vegetation not present based on less than 50% of species that are OBL, FACW, or FAC and a prevalence index greater than 3.

SOIL Sampling Point: WL-E-UPL

Pr	ofile Descri	ption: (Des		depth ne	eded to document			confirm	the absence of Indicators.)	
	Depth	0-1	Matrix	0/	Calan (masiat)		eatures	1 2	Tankuna	Damanta
_(inches)		(moist)	<u></u> %	Color (moist)	%	Type ¹	LOC 2	Texture	Remarks
0		10YR	3/2	100					FINE SANDY LOAM	
7	to 20	10YR	6/8	100					COARSE SILTY SAND	10% rounded quartz pebbles
1 T	ype: C=Cond	centration, D	=Depletion,	RM=Redu	ıced Martix, CS=Co	vered or	Coated S	Sand Gra	ains. ² Location: PL=Pore Lining	g, M=Matrix.
Н	ydric Soil In	idicators:			Polyvalue Below S	turfoos (S	0) /I DD C	T 11)	Indicators for Problematic H	íydric Soils: 3
	Histosol (A1)			Thin Dark Surface	•		1,0)	1 cm Muck (A9) (LRR O)	
	Histic Epipe	don (A2)			Loamy Mucky Mine	. , .			2 cm Muck (A10) (LRR S)	
	Black Histic	(A3)					Litte		Reduced Vertic (F18) (outside	MI DA 150A B)
	Hydrogen Si	ulfide (A4)			Loamy Gleyed Ma				Piedmont Floodplain Soils (F1	: *
	Stratified La	yers (A5)			Depleted Matrix (F	3)			Anomalous Bright Loamy Soils	
	_	lies (A6) (LRR	•		Redox Dark Surfac	` '			(MLRA 153B)	3 (1 20)
L	_	Mineral (A7)			Depleted Dark Sur				Red Parent Material (TF2)	
F	7	nce (A8) (LRF	•		Redox Depression	ıs (F8)			Very Shallow Dark Surface (T	F12) (LRR T, U)
F	_ `	A9) (LRR P, 1	•		Marl (F10) (LRR U)			Other (Explain in Remarks)	
	- '	low Dark Surf	ace (A11)		Depleted Ochric (F	-11) (MLR	RA 151)		³ Indicators of hydrophytic ve	egetation and wetland
F	7	Surface (A12)	(MLRA 150A	`	Iron-Manganese M	lasses (F1	12) (LRR O	, P, T)	hydrology must be present,	
	_	y Mineral (S1	•	,	Umbric Surface (F	13) (LRR	P. T. U)		unless disturbed or problen	natic.
E	,	ed Matrix (S4)	(LIXIX O, S)		Delta Ochric (F17)		•			
F	Sandy Cleyo				Reduced Vertic (F	•	•	ND)		
F	Stripped Ma					, ,		•		
F		e (S7) (LRR F	S T U)		Piedmont Floodpla	•	, ,	,		
			, 0, 1, 0)		Anomalous Bright	Loamy So	oils (F20) (N	/ILRA 149	0A, 153C, 153D)	
L	Restrictiv	ve Layer (i	f observe	d):						
	Type:								Hydric Soil Present?	Yes No X
	Depth (inche	es):							Hydric 3011 Fresent:	Tes NO _X
Rer	narks:									
N	o hydric soils p	oresent based	on soils not m	neeting any	of the hydric soil indica	tors				

Project/Site: Orsted	City/County:	Ocean County Sampling Date: 5/7/2020
Applicant/Owner: Ocean Wind - Holtec Property		State: NJ Sampling Point: WL-E-WET
Investigators: Stephen Seymour Jac	clyn Chapman	Section, Township, Range S T Lacey R
Landform (hillslope, terrace, etc.):	Local Relief (c	oncave, convex, none): None Slope(%) 0
Subregion (LRRor MLRA): LRR T L	_at: 39.808934	Long: -74.498696 Datum: WGS 1984
Soil Map Unit Name: Manahawkin Muck, 0-2% slop	De .	NWI Classification: PFO4Cg
Are climatic / hydrologic conditions on the site typical fo	or this time of year? Yes X	No (If No, explain in Remarks)
Are Vegetation, Soil, Hydrology, s		Are "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, Hydrology, r		(If needed, explain any answers in Remarks.)
		nt locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X No		
Hydric Soil Present? Yes X No	Is the Sampled Area within a Wetland?	
Wetland Hydrology Present? Yes X No		Yes X No
Remarks: Wetland is an Atlantic white cedar swamp with a few re	ed maple. Very dense tree canopy/o	closure with sparse shrub layer.
HYDROLOGY		
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check	all that apply)	Secondary Indicators (minimum of two required) Surface Soil Cracks (B6)
Surface Water (A1)	Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
✓ High Water Table (A2)	Marl Deposits (B15) (LRR U)	Drainage Patterns (B10)
Saturation (A3)	Hydrogen Sulfide Odor (C1)	Moss Trim Lines (B16)
Water Marks (B1)	Oxidized Rhizospheres along Living Ro	oots (C3) Dry-Season Water Table (C2)
Sediment Deposits (B2)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Drift Deposits (B3)	Recent Iron Reduction in Tilled Soils (C	C6) Saturation Visible on Aerial Imag.(C9)
Algal Mat or Crust (B4)	Thin Muck Surface (C7)	Geomorphic Position (D2)
Iron Deposits (B5)	Other (Explain in Remarks)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)		FAC-Neutral Test (D5)
✓ Water-Stained Leaves (B9)		Sphagnum moss (D8) (LRR T,U)
Field Observations:		
Surface Water Present? Yes No	X Depth (inches):	
Water Table Present? Yes X No	Depth (inches): To Surface	
Saturation Present? Yes X No	Depth (inches): To Surface	Wetland Hydrology Present? Yes X No
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial)	photos, previous inspections), if available:	
Remarks: Very shallow (<10") root zone for Atlantic white cedars. Wetland		



		<u>.</u>	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Wo	rksheet:			
Tree Stratum (Plot size	: 30 Ft)				Number of Dominant			6	(A)
Chamaecyparis thyoides		· '	80	Υ	OBL	That Are OBL, FACV	v, or FAC	J:		_ ('')
Acer rubrum			10	N	FAC	Total Number of Dom				
			90	=Total Cover		Species Across all St	rata:		6	(B)
Shrub Stratum (Plot size	: 30 Ft	_)	20	 Y	FACW	Percent of Dominant That Are OBL, FACW		: —	100.0%	(A/B)
Vaccinium corymbosum			20	Υ	FACW	Prevalence Index W	orkshee	t:		
Viburnum dentatum			10	Υ	FAC	Total % Cover of			ply by:	
			50	=Total Cover		OBL species	80	x 1 =	80	
Herb Stratum (Plot size	· 6 Ft	1				·	80	x 2 =	160	
Osmundastrum cinnamomeum		_ /	40	Υ	FACW	FACW species	40	x 3 =	120	
			40	=Total Cover		FAC species				
Vine Stratum (Diet sine				Total Cover		FACU species	0	x 4 =	0	
——— (Plot size	: 30 Ft	_)				UPL species	0	x 5 =	0	
Toxicodendron radicans				_ Y	FAC	Column Totals:	200	(A)	360	(B)
			20	=Total Cover		Duning land	D/4	_	4.00	
						Prevalence Inde			1.80	
						Hydrophytic Vegetati	on Indic	ators:		
						1 - Rapid Test for	r Hydroph	nytic Ve	getation	
						X 2 - Dominance Te	est > 50%	6		
						X 3 - Prevalence In	dex ≤ 3.0)		
						Problematic Hydr	onbutic \	/ogotati	on (Evr	dain)
						Problematic Hydr Indicators of hydric soil		•		лапт)
						be present, unless distu				
						Definitions of Vegetat	ion Stra	ta:		
						Tree – Woody plants, e	excluding	woody	vines,	
						approximately 20 ft (6 r (7.6 cm) or larger in dia				
						Sapling – Woody plants	e evoludi	ina woo	dv vines	
						approximately 20 ft (6 r than 3 in. (7.6 cm) DBH	n) or moi			
						Shrub – Woody plants, approximately 3 to 20 f				
						Herb – All herbaceous herbaceous vines, rega	(non-woo	ody) plar	nts, inclu	ding
						plants, except woody vi 3 ft (1 m) in height.				
						Woody vine – All wood	y vines, r	egardle	ss of hei	ght.
						Hydrophytic Vegetation Present	? Yes	x	No	

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

Fairly even-aged stand of Atlantic white cedar; most trees are 6-10" DBH; few are 12" DBH. Hydric vegetation present based on 100% of species that are OBL, FACW, or FAC and a prevalence index less than or equal to 3.

SOIL Sampling Point: WL-E-WET

Profile Descri	• `	he depth n	eeded to document			confirm	the absence of Indicators.)	
Depth	Matrix				eatures			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc 2	Texture	Remarks
0 to 20	10YR 2 / 1	100					PEATY MUCK	Soft saturated peaty muck
¹ Type: C=Con	centration, D=Depletic	on, RM=Red	duced Martix, CS=Co	overed or	Coated S	Sand Gra	ains. ² Location: PL=Pore Lin	ing, M=Matrix.
5 cm Mucky Muck Prese 1 cm Muck Depleted Be Thick Dark Coast Prair Sandy Mucl	edon (A2) edon (A2) edon (A2) edon (A3) pulfide (A4) eyers (A5) dies (A6) (LRR P, T, U) Mineral (A7) (LRR P, T, ence (A8) (LRR U) (A9) (LRR P, T) elow Dark Surface (A11) Surface (A12) ee Redox (A16) (MLRA 15 ey Mineral (S1) (LRR O, S) ed Matrix (S4)	0A)	Polyvalue Below S Thin Dark Surface Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfa Depleted Dark Su Redox Depression Marl (F10) (LRR L Depleted Ochric (I Iron-Manganese M Umbric Surface (F Delta Ochric (F17) Reduced Vertic (F	(S9) (LR eral (F1) (trix (F2) F3) ce (F6) rface (F7) ns (F8) J) F11) (MLF Masses (F F13) (LRR	R S, T, U) LRR O) RA 151) 12) (LRR O P, T, U) 51)	, P, T)	Indicators for Problematic 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outsi Piedmont Floodplain Soils (Anomalous Bright Loamy S (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface Other (Explain in Remarks) Indicators of hydrophytic hydrology must be prese unless disturbed or problematics.	ide MLRA 150A,B) (F19) (LRR P, S, T) foils (F20) (TF12) (LRR T, U)
Stripped Ma	atrix (S6) te (S7) (LRR P, S, T, U)		Piedmont Floodpla Anomalous Bright	•		•	9A, 153C, 153D)	
Restricti Type: Depth (inch	ve Layer (if observ	/ed):					Hydric Soil Present?	Yes X No
	r soft mucky peat to > 3 ft tosol (H1) indicator.	below ground	l surface. Large open w	ater to eas	st consisten	t with aeri	ial photos and NWI mapping. Hydric soil	Is present based on criteria

Project/Site: Orst	ted		City/Cou	unty: Oce	ean County	Sampling Date:	8/10/2020
Applicant/Owner:	Ocean Wind - Fo	orked River, LLC			State: NJ	Sampling Point:	WL-F-UP
Investigators: Za	ak Lehmann	Jacl	yn Chapman	Sec	tion, Township, Rang	je S TLac	cey R
Landform (hillslope, t	errace, etc.):	Level		Local Relief (conca	ave, convex, none):	None	Slope(%) 0
Subregion (LRRor MI	LRA): LRR T	La	t: 39.811434	Lon	g: -74.209815	Datur	n: WGS 1984
Soil Map Unit Name:	Lakehurst sa	nd, 0 to 5 percent	slopes		NWI Classifi	cation: Not mapp	oed
Are climatic / hydrolo		•	•	Yes X No		(plain in Remarks)	
Are Vegetation	_		_		'Normal Circumstance	• • • • • • • • • • • • • • • • • • • •	s X No
Are Vegetation	_		-	.0			
-				(11.1	needed, explain any a ocations, transe		,
			ap onowing or	ampung pomen	ocationo, tranco	oto, important	<u>louturoo, oto:</u>
Hydrophytic Vegeta		Yes X No	Is the	Sampled Area			
Hydric Soil Present		Yes No		a Wetland?	Yes	No X	
Wetland Hydrology	Present?	Yes No	X				
HIVDROLOGY							
HYDROLOGY					0 1	In the state of the later	
Wetland Hydrology Primary Indicators (r		roquirod: chock (all that apply)				ım of two required)
		required, check a				ce Soil Cracks (B6)	o Surface (PS)
Surface Water (A1) High Water Table (A)			Aquatic Fauna (B13)		= '	ely Vegetated Concav age Patterns (B10)	e Surface (BO)
Saturation (A3)	12)		Marl Deposits (B15)			Trim Lines (B16)	
Water Marks (B1)			Hydrogen Sulfide Ode	or (C1) es along Living Roots (eason Water Table (C	(2)
Sediment Deposits	(B2)		Presence of Reduced			sh Burrows (C8)	,
Drift Deposits (B3)	,		Recent Iron Reductio		Satura	ation Visible on Aerial	Imag.(C9)
Algal Mat or Crust ((B4)		Thin Muck Surface (` ,	Geom	orphic Position (D2)	
Iron Deposits (B5)			Other (Explain in Rer	·	Shallo	w Aquitard (D3)	
Inundation Visible of	on Aerial Imagery (B7)		,	FAC-N	Neutral Test (D5)	
Water-Stained Leav	ves (B9)				Sphag	num moss (D8) (LRR	. T,U)
Field Observations:	<u>.</u>						
Surface Water Prese	nt? Yes	No _X	Depth (inches):				
Water Table Present?		No _X			Matlemal Huduel	Ja D	Vaa Na V
Saturation Present?	Yes	No _X	Depth (inches):		Wetland Hydrol	ogy Present?	Yes No_X_
(includes capillary frin Describe Recorded Data	U /	nitoring well, aerial ph	notos, previous inspec	tions), if available:			
Remarks:							
No wetland hydrology pr	esent						



VEGETATION_	JSE SCIENTING HAIT	ies oi piants.	Absoluts	Daminant	lu dia atau	Jan	ipiniy Foili	t. <u>VV</u> L-I	-01	
			Absolute % Cover	Dominant Species	Indicator Status	Dominance Test V	Vorksheet	:		
Tree Stratum Pinus rigida	(Plot size: 30 Ft	:)	80	Y	FACU	Number of Domina That Are OBL, FA			2	(A)
			80	=Total Cover		Total Number of Do			3	(B)
Shrub Stratum	(Plot size: 30 Ft	:)	40	.,	540	Dancart of Dancing	-4 0			
Myrica pensylvar Pinus rigida	nica		40 5	Y N	FACU	Percent of Dominar That Are OBL, FAC			66.7%	(A/B)
			45	=Total Cover		Prevalence Index	Workshee	t:		
Herb Stratum	(Plot size: 6 Ft)				Total % Cover	of:	Multi	ply by:	
Panicum dichoto	· · · · · · · · · · · · · · · · · · ·	,	100	Υ	FACW	OBL species	0	x 1 =	0	
			100	=Total Cover		FACW species	100	x 2 =	200	
Vine Stratum						FAC species	40	x 3 =	120	
						FACU species	85	x 4 =	340	
						UPL species	0	x 5 =	0	
						Column Totals:	225	(A)	660	(B)
						Prevalence Ir	ndex = B/A	=	2.93	
						Hydrophytic Vegeta	ation Indic	cators:		
						1 - Rapid Test	for Hydrop	hytic Ve	getation	
						X 2 - Dominance	Test > 50°	%		
						X 3 - Prevalence	Index ≤ 3.0	0		
						Problematic Hy	drophytic '	Vegetati	on (Exp	olain)
						Indicators of hydric so be present, unless dis				
						Definitions of Veget	tation Stra	ıta:		
						Tree – Woody plants approximately 20 ft (6 (7.6 cm) or larger in 6	6 m) or mo	re in hei	ght and	
						Sapling – Woody pla approximately 20 ft (6 than 3 in. (7.6 cm) DI	6 m) or mo			
						Shrub – Woody plant approximately 3 to 20				
						Herb – All herbaceou herbaceous vines, re plants, except woody 3 ft (1 m) in height.	gardless o	f size. In	cludes v	woody
						Woody vine – All woo	ody vines,	regardle	ss of he	ight.
						Hydrophytic Vegetation Prese	nt? Yes	s_X	No	

SOIL Sampling Point: WL-F-UP

Depth	iption. (Des	Matrix	deptii net	saca to accamen		Features	COMMIN	the absence of indicators.)	
(inches)	Colo	r (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 4	10YR	3/1	50	10YR7/2	50	С	М	SAND	
4 to 20	10YR	6/6	100					SAND	
¹Type: C=Con	centration, I	D=Depletion,	RM=Redu	ced Martix, CS=Co	overed o	Coated	 Sand Gra	nins. ² Location: PL=Pore Lin	ning, M=Matrix.
Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) (LRR P, T, U) 5 cm Mucky Mineral (A7) (LRR P, T, U) Muck Presence (A8) (LRR U) 1 cm Muck (A9) (LRR P, T) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Coast Prairie Redox (A16) (MLRA 150A) Sandy Mucky Mineral (S1) (LRR O, S) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U)				Polyvalue Below Surface (S8) (LRR S, T, U)					
	` '	P, S, T, U)	[Pledmont Floodpl			•	A, 153C, 153D)	
Restrict		if observe	d):					Hydric Soil Present?	Yes No X
Remarks: No hydric soil ii	ndicators pres	ent							

Project/Site: Orsted City/County:	Ocean County Sampling Date: 5/7/2020
Applicant/Owner: Ocean Wind - Forked River Property	State: NJ Sampling Point: WL-F-WET
Investigators: Stephen Seymour Jaclyn Chapman	Section, Township, Range S T Lacey R
Landform (hillslope, terrace, etc.): Hillslope Local Relief (cc	oncave, convex, none): Concave Slope(%) 0
Subregion (LRRor MLRA): LRR T Lat: 39.811394	Long: -74.209175 Datum: WGS 1984
Soil Map Unit Name: Lakehurst Sand 0-5% slopes	NWI Classification: Not mapped
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X	No (If No, explain in Remarks)
Are Vegetation, Soil, Hydrology, significantly disturbed?	Are "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, Hydrology, naturally problematic?	(If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach a site map showing sampling poir	
Hydrophytic Vegetation Present? Yes X No	
Hydric Soil Present? Yes V. No. Is the Sampled Area	
Wetland Hydrology Present? Yes X No within a Wetland?	Yes X No
Remarks:	
Narrow reed grass-dominated wetland. Source is a corrugated steel culvert and a concrete	
HYDROLOGY	
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required) Surface Soil Cracks (B6)
Surface Water (A1) Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Marl Deposits (B15) (LRR U)	Drainage Patterns (B10)
Saturation (A3) Hydrogen Sulfide Odor (C1)	Moss Trim Lines (B16)
Water Marks (B1) Oxidized Rhizospheres along Living Roo	ots (C3) Dry-Season Water Table (C2)
Sediment Deposits (B2) Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Drift Deposits (B3) Recent Iron Reduction in Tilled Soils (C	6) Saturation Visible on Aerial Imag.(C9)
Algal Mat or Crust (B4) Thin Muck Surface (C7)	Geomorphic Position (D2)
☐ Iron Deposits (B5) ☐ Other (Explain in Remarks)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	FAC-Neutral Test (D5)
✓ Water-Stained Leaves (B9)	Sphagnum moss (D8) (LRR T,U)
Field Observations:	
Surface Water Present? Yes No X Depth (inches):	
Water Table Present? Yes No X Depth (inches):	
Saturation Present? Yes No _X Depth (inches):	Wetland Hydrology Present? Yes X No
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Adjacent uplands are early successional red cedar and pitch pines ~5-15' tall. Saturation at approximately water-stained leaves.	15 inches below the ground surface. Wetland hydrology present based on



EGETATION Use scientific names of plants.				Sampling Point	t: WL-F-WET	
	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	:	
Tree Stratum				Number of Dominant Species That Are OBL, FACW, or FA		(A)
Shrub Stratum (Plot size: 30 Ft)				That Ale Obe, I Aow, of I A	O	_ ` ′
Juniperus virginiana	20	Υ	FACU	Total Number of Dominant Species Across all Strata:	4	(B)
Pinus resinosa	20	Y	FACU	Opecies Across all Strata.		_ (D)
	40	=Total Cover		Percent of Dominant Species That Are OBL, FACW, or FAC	50.0%	(A/B
Herb Stratum (Plot size: 6 Ft)				, ,		
Panicum dichotomiflorum	60	Υ	FACW	Prevalence Index Workshee	t:	
Phragmites australis	30	Υ	FACW	Total % Cover of:	Multiply by:	
	90	=Total Cover		OBL species 0	x 1 = 0	
Vine Stratum_				FACW species 90	x 2 = 180	
				FAC species 0	x 3 = 0	
				FACU species 40	x 4 = 160	
				UPL species 0	x 5 = 0	
				Column Totals: 130	(A) 340	(B)
				Prevalence Index = B/A	= 2.62	
				Hydrophytic Vegetation Indic	cators:	
				1 - Rapid Test for Hydrop	hytic Vegetation	
				2 - Dominance Test > 50%	%	
				X 3 - Prevalence Index ≤ 3.0)	
				Problematic Hydrophytic \	vegetation (Exp	olain)
				Indicators of hydric soil and wetlar be present, unless disturbed or pr		
				Definitions of Vegetation Stra	ta:	
				Tree – Woody plants, excluding approximately 20 ft (6 m) or mo (7.6 cm) or larger in diameter at	re in height and	
				Sapling – Woody plants, exclud approximately 20 ft (6 m) or mo than 3 in. (7.6 cm) DBH.		
				Shrub – Woody plants, excludin approximately 3 to 20 ft (1 to 6 to		
				Herb – All herbaceous (non-wook herbaceous vines, regardless oplants, except woody vines, less 3 ft (1 m) in height.	f size. Includes v	woody
				Woody vine – All woody vines, i	regardless of hei	ight.
				Hydrophytic Vegetation Present? Yes	s X No	

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

Hydrophytic vegetation present based on a prevalence index less than or equal to 3.

SOIL Sampling Point: WL-F-WET

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

D	epth		Matrix			Redox I	Features			
	nches)	Colo	(moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0	to 4	10YR	4/1	100					FINE SANDY LOAM	
4	to 11	10YR	5/2	70	10YR 5/6	30	C	M	FINE SANDY LOAM	
11	to 20	10YR	3/2	100					FINE SANDY LOAM	
1Ty	pe: C=Cond	centration, [)=Depletion,	RM=Rec	uced Martix, CS=C	overed o	Coated S	Sand Gra	ains. ² Location: PL=Pore Lining,	M=Matrix.
Hy	dric Soil Ir	idicators:			Polyvalue Below	Surface (S	:Ω\ /I DD Q	T II)	Indicators for Problematic Hy	dric Soils: 3
	Histosol (A1)			Thin Dark Surfac			1,0)	1 cm Muck (A9) (LRR O)	
	Histic Epipe				Loamy Mucky Min				2 cm Muck (A10) (LRR S)	
	Black Histic				Loamy Gleyed M		(2 0)		Reduced Vertic (F18) (outside M	(LRA 150A.B)
	Hydrogen S					` ,			Piedmont Floodplain Soils (F19)	· •
	Stratified La	yers (A5) lies (A6) (LRF	D T 11\		✓ Depleted Matrix (Redox Dark Surfa	,			Anomalous Bright Loamy Soils (F20)
Н	•	. , .	(LRR P, T, U)		Depleted Dark Su	. ,			(MLRA 153B)	
. \Box		nce (A8) (LRF			Redox Depression				Red Parent Material (TF2) Very Shallow Dark Surface (TF1	2) /I PR T II)
		A9) (LRR P,	•		Marl (F10) (LRR	` ,			Other (Explain in Remarks)	2) (LIXIX 1, 0)
	Depleted Be	low Dark Sur	face (A11)		Depleted Ochric	•	24 454)		_ ` ` '	
	Thick Dark S	Surface (A12)			_ ·	. , .	,		³ Indicators of hydrophytic vege hydrology must be present,	etation and wetland
	Coast Prairie	e Redox (A16) (MLRA 150A)	Iron-Manganese	`	, ,), P, T)	unless disturbed or problema	tic.
Ц	=	y Mineral (S1			Umbric Surface (•			
Ц		ed Matrix (S4)			Delta Ochric (F17	, ,	•			
	Sandy Redo	` '			Reduced Vertic (F18) (MLR	A 150A, 15	0B)		
	Stripped Ma	, ,			Piedmont Floodp	lain Soils (F19) (MLR	A 149A)		
	Dark Surfac	e (S7) (LRR F	, S, I, U)		Anomalous Brigh	t Loamy S	oils (F20) (I	MLRA 149	9A, 153C, 153D)	
	Restricti	ve Layer (if observed	d):						
	Туре:								Hydric Soil Present? Ye	es X No
	Depth (inche	es):							Tiyano con Frederic.	
	arks:				IM (: (FO): I: (
ну	aric soils pres	sent based or	soils meeting	the Deplet	ed Matrix (F3) indicato	r				
										l

Subregion (LRRor MLRA): LRRT	Project/Site: (Orsted		City/	County:	Ocean County Sampling Date: 8/11/2020	
Landform (hillslope, terrace, etc.): None Local Relief (concave, convex, none): None Slope(%) Subregion (LFRor MLRA): Lat: 39.811379 Long: 74.212809 Datum: W68 1984 Soli Map Unit Name: Lakehurst Sand, 0-5% slopes Are climatic hydrologic conditions on the site typical for this time of year? Yes X No Are Vegetation Soli Hydrology significantly disturbed? Are Normal Circumstances' present? Yes X No Are Vegetation Soli Hydrology in naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS - Attach a site map showing sampling point locations, transects, important features, Hydrology Present? Hydrophytic Vegetation Present? Yes No X Wetland Hydrology Present? Wetland Hydrology Present Remarks: Hydrophytic vegetation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology Hydrophytic vegetation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology Hydrophytic vegetation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology Hydrophytic vegetation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology Hydrophytic vegetation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology Hydrophytic vegetation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology Bydrace Water (A1) Hydrophytic vegetation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology Secondary Indicators: Secondary Indicators (minimum of two requestions in Table (C1) Secondary Indicators (B1) Secondary Indicators	Applicant/Owner:	Ocean Wind -	· Forked River, LLC			State: NJ Sampling Point: WL-G1-UP	
Subregion (LRRor MLRA): LRR T	Investigators:	Zak Lehmann	Ja	clyn Chapman		Section, Township, Range S T Lacey R	
Soil Map Unit Name: Lakehurst Sand, 0-5% slopes NWI Classification: None mapped Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If No, explain in Remarks) Are Vegetation	Landform (hillslop	e, terrace, etc.):	None		Local Relief (d	concave, convex, none): None Slope(%)	0
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If No, explain in Remarks) Are Vegetation Soil Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No Are Vegetation Soil Hydrology naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS - Attach a site map showing sampling point locations, transects, important features, Hydrophytic Vegetation Present? Yes X No X Is the Sampled Area within a Wetland Hydrology Present? Yes No X Wetland Hydrology Present? Yes No X Is the Sampled Area within a Wetland? Yes No X Wetland Hydrology Present? Yes No X Secondary Indicators (minimum of two requestation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology Indicators: HYDROLOGY Wetland Hydrology Indicators: Bufface Water (A1) Aquatic Fauna (B13) Surface Soil Cracks (B8) Hydrogen Sufface Oder (C1) Surface Water (A1) Phydrogen Sufface Oder (C1) Drainage Patterns (B10) Water Marks (B1) Oxidized Rhizospheres along Living Roots (C3) Drainage Patterns (B10) Water Marks (B1) Oxidized Rhizospheres along Living Roots (C3) Drainage Patterns (B10) Water Marks (B1) Oxidized Rhizospheres along Living Roots (C3) Saturation (Val)	Subregion (LRRo	r MLRA): LRR T	I	_at: 39.811379		Long: -74.212809 Datum: WGS 1984	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If No, explain in Remarks) Are Vegetation Soil Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No Are Vegetation Soil Hydrology naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS - Attach a site map showing sampling point locations, transects, important features, Hydrophytic Vegetation Present? Yes X No X Is the Sampled Area within a Wetland Hydrology Present? Yes No X Wetland Hydrology Present? Yes No X Is the Sampled Area within a Wetland? Yes No X Wetland Hydrology Present? Yes No X Secondary Indicators (minimum of two requestation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology Indicators: HYDROLOGY Wetland Hydrology Indicators: Bufface Water (A1) Aquatic Fauna (B13) Surface Soil Cracks (B8) Hydrogen Sufface Oder (C1) Surface Water (A1) Phydrogen Sufface Oder (C1) Drainage Patterns (B10) Water Marks (B1) Oxidized Rhizospheres along Living Roots (C3) Drainage Patterns (B10) Water Marks (B1) Oxidized Rhizospheres along Living Roots (C3) Drainage Patterns (B10) Water Marks (B1) Oxidized Rhizospheres along Living Roots (C3) Saturation (Val)	Soil Map Unit Nar	ne: Lakehurst	Sand. 0-5% slopes			NWI Classification: None mapped	
Are Vegetation, Soil, Hydrology, significantly disturbed?	Are climatic / hvdi		•		r? Yes X		
Are Vegetation	_	_		-			0
SUMMARY OF FINDINGS - Attach a site map showing sampling point locations, transects, important features, which is the sampled Area within a Wetland Hydrology Present? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland Hydrology Present? Yes No X Is the Sampled Area within a Wetland Hydrology Present? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland Proposed Sufface Value of the Sampled Area within a Wetland Proposed Sufface Soil Cracks (B6) Is the Sampled Area within a Wetland Based on lack of hydric soils and wetland hydrology Indicators (minimum of two required; check all that apply) Is surface Soil Cracks (B6) Is shared	_			_			
Hydrochytic Vegetation Present? Yes X No X Wetland Hydrology Present? Yes No X Remarks: Hydrophytic vegetation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology Indicators: Hydrophytic vegetation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology Indicators: Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) Hydrogen Sulfide Odor (C1) Saturation (A3) Hydrogen Sulfide Odor (C1) Water Marks (B1) Sediment Deposits (B15) Drift Deposits (B3) Recent from Reduction in Tilled Soils (C6) Drift Deposits (B3) Recent from Reduction in Tilled Soils (C6) In Indicators (Water Marks (B4) In Inh Muck Surface (C7) Water-Stained Leaves (B9) Presence of Reduced from (C4) Inhin Muck Surface (C7) Water Table Present? Water Table Present? Yes No X Depth (inches): Wetland Hydrology Present? Yes No Remarks:							
Hydric Soil Present? Wetland Hydrology Present? Wetland Hydrology Present? Wetland Hydrology Present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology Hydrophytic vegetation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology Hydrophytic vegetation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology Indicators (minimum of two requestions) and the prevalence of Reduced Formation (B13) Hydrogen Sulfide Odor (C1)	SUMMARY C	<u>)F FINDINGS -</u>	Attach a site i	map showing	sampling poi	int locations, transects, important features,	etc.
Wetland Hydrology Present? Wetland Hydrology Indicators: Hydrophytic vegetation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) High Water Table (A2) High Water Table (A2) Aduatic Fauna (B13) Saturation (A3) Hydrogen Sulfide Odor (C1) Sediment Deposits (B1) Ordi Deposits (B2) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Finh Muck Surface (C7) In no Deposits (B3) In nundation Visible on Aerial Imagery (B7) Water Table (A2) Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16) Drainage Patterns (B10) Drainage Patterns (B10) Moss Trim Lines (B16) Drainage Patterns (B10) Moss Trim Li	Hydrophytic Veg	getation Present?	Yes X No)			
Wetland Hydrology Present? Remarks: Hydrophytic vegetation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology HYDROLOGY Wetland Hydrology Indicators: Wetland Hydrology Indicators: Wetland Hydrology Indicators: Wetland Hydrology Indicators: Secondary Indicators (minimum of two requestions) Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Hydrogen Sulfide Odor (C1) Saturation (A3) Hydrogen Sulfide Odor (C1) Sediment Deposits (B1) Water Marks (B1) Odized Rhizospheres along Living Roots (C3) Sediment Deposits (B2) Presence of Reduced Iron (C4) Drift Deposits (B3) Recent Iron Reduction in Tilled Soils (C8) Saturation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Field Observations: Surface Sulface (C7) Shallow Aquitard (D3) FAC-Neutral Test (D5) Sphagnum moss (D8) (LRR T, U) Wetland Hydrology Present? Yes No X Depth (inches): Water Table Present? Yes No X Depth (inches): Saturation Present? Yes No X Depth (inches): Water Table Present? Yes No X Depth (inches): Water Geometric Position (D2) Sphagnum moss (D8) (LRR T, U) Wetland Hydrology Present? Yes No No X Depth (inches): Wetland Hydrology Present? Yes No No X Depth (inches): Wetland Hydrology Present? Yes No No Wetland Hydrology Present? Yes No Wetland Hydrolo	Hydric Soil Pres	ent?	Yes No				
Remarks: Hydrophytic vegetation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) High Water Table (A2) Marl Deposits (B15) Mater Marks (B1) Seturation (A3) Hydrogen Sulfide Odor (C1) Moss Trim Lines (B16) Moss Trim Lines (B16) Presence of Reduced Iron (C4) Sediment Deposits (B3) Recent Iron Reduction in Tilled Soils (C6) Algal Mat or Crust (B4) Thin Muck Surface (C7) Inundation Visible on Aerial Imagery (B7) Water Stained Leaves (B9) FAC-Neutral Test (D5) Water Table Present? Yes No X Depth (inches): Water Table Present? Yes No X Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Wetland Hydrolo	ogy Present?	Yes No	WII	.nin a vveuanu?	Yes No X	
HYDROLOGY Wetland Hydrology Indicators: Secondary Indicators (minimum of two required; check all that apply) Surface Soil Cracks (B6)							
Wetland Hydrology Indicators (minimum of one is required; check all that apply) Surface Water (Ar1)							
Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) High Water Table (A2) Marl Deposits (B15) (LRR U) Saturation (A3) Hydrogen Sulfide Odor (C1) Water Marks (B1) Sediment Deposits (B2) Presence of Reduced Iron (C4) Marl Deposits (B3) Algal Mat or Crust (B4) Thin Muck Surface (C7) Mater-Stained Leaves (B9) Field Observations: Surface Water Present? Yes No X Depth (inches): Water Marks: Remarks: Semarks: Semarks: Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drint Deposits (B10) Moss Trim Lines (B16) Moss Trim Lines (B16) Moss Trim Lines (B16) Dry-Season Water Table (C2) Crayfish Burrows (C8) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Image.(C9) Saturation Visible on Aerial Image.(C9) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Field Observations: Surface Water Present? Yes No X Depth (inches): Wetland Hydrology Present? Yes No Remarks:	HYDROLOGY						
Surface Water (A1)	•	0.0				Secondary Indicators (minimum of two requ	ıired)
High Water Table (A2)	Primary Indicator	's (minimum of one	∍ is required; check	all that apply)			
Saturation (A3)		` '		Aquatic Fauna (B	13)		
Water Marks (B1)				Marl Deposits (B	15) (LRR U)		
Sediment Deposits (B2)	_ ` ′			Hydrogen Sulfide	Odor (C1)		
Drift Deposits (B3) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Algal Mat or Crust (B4) Thin Muck Surface (C7) Geomorphic Position (D2) Iron Deposits (B5) Other (Explain in Remarks) Shallow Aquitard (D3) FAC-Neutral Test (D5) Sphagnum moss (D8) (LRR T,U) Field Observations: Surface Water Present? Yes No X Depth (inches): Water Table Present? Yes No X Depth (inches): Saturation Present? Yes No X Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	_ `	•		Oxidized Rhizosp	heres along Living R	10013 (00)	
Algal Mat or Crust (B4)	_	` '		Presence of Redu	uced Iron (C4)		
Iron Deposits (B5)		·		Recent Iron Redu	ction in Tilled Soils ((CO)	
Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) FAC-Neutral Test (D5) Sphagnum moss (D8) (LRR T,U) Field Observations: Surface Water Present? Yes No X Depth (inches): Water Table Present? Yes No X Depth (inches): Saturation Present? Yes No X Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			L	ot Thin Muck Surfac	ce (C7)		
Water-Stained Leaves (B9) Sphagnum moss (D8) (LRR T,U)		•		Other (Explain in	Remarks)		
Field Observations: Surface Water Present? Yes No X Depth (inches): Water Table Present? Yes No X Depth (inches): Saturation Present? Yes No X Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:			(B7)			. ,	
Surface Water Present? Yes No X Depth (inches): Water Table Present? Yes No X Depth (inches): Saturation Present? Yes No X Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	Water-Stained I	Leaves (B9)				Sphagnum moss (D8) (LRR T,U)	
Water Table Present? Yes No X Depth (inches): Saturation Present? Yes No X Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	Field Observatio	ons:					
Saturation Present? Yes No X Depth (inches): Wetland Hydrology Present? Yes No (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	Surface Water Pr	esent? Y	es No	X Depth (inche	es):		
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	Water Table Pres	ent? Y	es No	X Depth (inche	es):	, , , , , ,	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:			es No	X Depth (inche	es):	wetiand Hydrology Present? Yes No	0_X_
Remarks:		, ,	monitoring well aerial	nhotos previous ins	nections) if available	۵۰	
		y present					



		Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum	(Plot size: 30 Ft)			
Juniperus virginiar	a	20	Υ	FACU
Prunus serotina		5	Υ	FACU
		25	=Total Cover	
Shrub Stratum	(Plot size: _30 Ft)			
Rubus idaeus		20	Υ	FACU
		20	=Total Cover	
<u>Herb Stratum</u>	(Plot size: 6 Ft)			
Panicum dichotom	iflorum	80	Υ	FACW
Eupatorium perfoli	atum	10	N	FACW
Phragmites austra	lis	10	N	FACW
		100	=Total Cover	
Vine Stratum_				

Prevalence Index = B/A= Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2.62

- 2 Dominance Test > 50%
- X 3 Prevalence Index ≤ 3.0

Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes X No

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

Hydrophytic vegetation based on prevalence index alone

SOIL Sampling Point: WL-G1-UP

Profile Desci	ription: (Des	cribe to the	depth ne	eded to documen	t the ind	icator o	r confirm	the absen	ce of Indicators.)			
Depth		Matrix				Features						
(inches)	Color	(moist)	%	Color (moist)	%	Type	1 Loc 2		Texture	Re	marks	
0 to 4	10YR	4/3	100					SAND				
4 to 12	10YR	6/6	100					SAND				
12 to 20	10YR	7/2	60	10YR5/6	40	С	M	SAND				
¹Type: C=Cor	ncentration, [)=Depletion,	, RM=Redu	uced Martix, CS=C	overed o	r Coated	Sand Gra	ains. 2	Location: PL=Pore	e Lining, M=Matr	ix.	
Stratified L Organic Bo 5 cm Muck Muck Pres 1 cm Muck Depleted E Thick Dark Coast Prai	edon (A2) c (A3) Sulfide (A4) ayers (A5) odies (A6) (LRF y Mineral (A7) ence (A8) (LRF (A9) (LRR P, - delow Dark Surf Surface (A12) rie Redox (A16	(LRR P, T, U) R U) Fi face (A11) (MLRA 150A) (LRR O, S)		Polyvalue Below Thin Dark Surface Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (Redox Dark Surface Redox Depressio Marl (F10) (LRR I Depleted Ochric (Iron-Manganese (e (S9) (LR neral (F1) fatrix (F2) F3) ace (F6) urface (F7) ns (F8) J) F11) (MLF Masses (F	R S, T, U) (LRR O) RA 151) 12) (LRR P, T, U)	, ·	1 1 2 2 R R P P (I R R P V P P P P P P P P P P P P P P P P	cm Muck (A9) (LRR cm Muck (A9) (LRR cm Muck (A10) (LRR ceduced Vertic (F18) Piedmont Floodplain Stanomalous Bright Loam MLRA 153B) Red Parent Material (1/2 (Fry Shallow Dark Surpher (Explain in Rem 1/3 Indicators of hydrophydrology must be unless disturbed or	O) R S) (outside MLRA 150 Soils (F19) (LRR P, Imy Soils (F20) IFF2) Irface (TF12) (LRR - Irrarks) Onlytic vegetation an present,	A,B) S, T) T, U)	
Sandy Rec Stripped M Dark Surfa	` '	P, S, T, U)	q).	Delta Ochric (F17 Reduced Vertic (I Piedmont Floodp Anomalous Brigh	=18) (MLR lain Soils (A 150A, 1 F19) (MLF	RA 149A)	9A, 153C, 153	BD)			
Type: Depth (incl			<u></u>					Hydric	Soil Present?	Yes	No X	
Remarks:												
No hydric soil	ndicators prese	ent										

	City/Co	ounty: Ocean	County	Sampling Date:	5/7/2020
d - Forked River I	Property		State: NJ	Sampling Point:	WL-G-WET
our	Jaclyn Chapman	Section	, Township, Range	e S T Lac	ey R
: None		Local Relief (concave,	convex, none): N	lone	Slope(%) 0
т	Lat: 39.811349	Long:	-74.213354	Datum	n: WGS 1984
rst sand 0-5% slo	pes		NWI Classific	cation: Not mapp	ed
is on the site typic	cal for this time of year?	Yes X No	(If No, ex	olain in Remarks)	
_, Hydrology	, significantly disturbe	ed? Are "Nor	mal Circumstance	s" present? Yes	s X No
_, Hydrology	, naturally problemati	ic? (If nee	ded, explain any a	nswers in Remark	s.)
3 - Attach a s	ite map showing s	sampling point loca	ations, transed	cts, important	features, etc.
:? Yes X	No				
Yes X					
	No withi	in a wetiand?	Yes	X No	
			Secondary I	ndicators (minimu	m of two required)
	heck all that apply)			•	in or two required)
2110 10 10 quii 0u, 0i				` '	e Surface (R8)
	_ ` `	,	= '		e Surface (DO)
				rim Lines (B16)	
		dor (C1)		` '	2)
	Hydrogen Sulfide O	, ,	Dry-Se	ason Water Table (C:	
	Oxidized Rhizosphe	eres along Living Roots (C3)		ason Water Table (Ca h Burrows (C8)	2)
	Oxidized Rhizosphe	eres along Living Roots (C3) ed Iron (C4)	Crayfis	h Burrows (C8)	
	Oxidized Rhizosphe Presence of Reduce Recent Iron Reducti	eres along Living Roots (C3) ed Iron (C4) ion in Tilled Soils (C6)	☐ Crayfis☐ Saturat	h Burrows (C8) ion Visible on Aerial I	
	Oxidized Rhizosphe Presence of Reduce Recent Iron Reducti Thin Muck Surface	eres along Living Roots (C3) ed Iron (C4) ion in Tilled Soils (C6) (C7)	Crayfisi Saturat Geomo	h Burrows (C8) ion Visible on Aerial I orphic Position (D2)	
ny (87)	Oxidized Rhizosphe Presence of Reduce Recent Iron Reducti	eres along Living Roots (C3) ed Iron (C4) ion in Tilled Soils (C6) (C7)	Crayfisi Saturat Geomo	h Burrows (C8) ion Visible on Aerial I orphic Position (D2) v Aquitard (D3)	
ery (B7)	Oxidized Rhizosphe Presence of Reduce Recent Iron Reducti Thin Muck Surface	eres along Living Roots (C3) ed Iron (C4) ion in Tilled Soils (C6) (C7)	Crayfisl Saturat Geomo Shallov FAC-No	h Burrows (C8) ion Visible on Aerial I rphic Position (D2) v Aquitard (D3) eutral Test (D5)	lmag.(C9)
ery (B7)	Oxidized Rhizosphe Presence of Reduce Recent Iron Reducti Thin Muck Surface	eres along Living Roots (C3) ed Iron (C4) ion in Tilled Soils (C6) (C7)	Crayfisl Saturat Geomo Shallov FAC-No	h Burrows (C8) ion Visible on Aerial I orphic Position (D2) v Aquitard (D3)	lmag.(C9)
	Oxidized Rhizosphe Presence of Reduce Recent Iron Reducti Thin Muck Surface Other (Explain in Re	eres along Living Roots (C3) ed Iron (C4) ion in Tilled Soils (C6) (C7) emarks)	Crayfisl Saturat Geomo Shallov FAC-No	h Burrows (C8) ion Visible on Aerial I rphic Position (D2) v Aquitard (D3) eutral Test (D5)	lmag.(C9)
Yes No	Oxidized Rhizosphe Presence of Reduce Recent Iron Reducti Thin Muck Surface Other (Explain in Re	eres along Living Roots (C3) ed Iron (C4) ion in Tilled Soils (C6) (C7) emarks)	Crayfisl Saturat Geomo Shallov FAC-No	h Burrows (C8) ion Visible on Aerial I rphic Position (D2) v Aquitard (D3) eutral Test (D5)	lmag.(C9)
Yes No Yes _X No	Oxidized Rhizosphe Presence of Reduce Recent Iron Reducti Thin Muck Surface Other (Explain in Re	eres along Living Roots (C3) ed Iron (C4) ion in Tilled Soils (C6) (C7) emarks)):	Crayfis Saturat Geomo Shallov FAC-N Sphagr	h Burrows (C8) ion Visible on Aerial I rphic Position (D2) v Aquitard (D3) eutral Test (D5) num moss (D8) (LRR	Imag.(C9) T,U)
Yes No	Oxidized Rhizosphe Presence of Reduce Recent Iron Reducti Thin Muck Surface Other (Explain in Re	eres along Living Roots (C3) ed Iron (C4) ion in Tilled Soils (C6) (C7) emarks)):	Crayfisl Saturat Geomo Shallov FAC-No	h Burrows (C8) ion Visible on Aerial I rphic Position (D2) v Aquitard (D3) eutral Test (D5) num moss (D8) (LRR	lmag.(C9)
Yes No YesX No YesX No	Oxidized Rhizosphe Presence of Reduce Recent Iron Reducti Thin Muck Surface Other (Explain in Re	eres along Living Roots (C3) ed Iron (C4) ion in Tilled Soils (C6) (C7) emarks) b:	Crayfis Saturat Geomo Shallov FAC-N Sphagr	h Burrows (C8) ion Visible on Aerial I rphic Position (D2) v Aquitard (D3) eutral Test (D5) num moss (D8) (LRR	Imag.(C9) T,U)
	None Trest sand 0-5% slopes on the site typic Hydrology Hydrology S - Attach a si Yes X Yes X Yes X Hydrology X Yes X Yes X Yes X	In the state of this time of year? In the site typical for this time of year? In the site typical for this time of year? In the site typical for this time of year? In the site typical for this time of year? In the site typical for this time of year? In the site map showing state in the site map show	Jaclyn Chapman Section Local Relief (concave, Toward Lat: 39.811349 Long: Instead 0-5% slopes as on the site typical for this time of year? Yes X Now, Hydrology , significantly disturbed? Are "Norw, Hydrology , naturally problematic? (If needs of the samp showing sampling point local size in X Now Yes X	None Local Relief (concave, convex, none): Note of the street sand 0-5% slopes NWI Classificates on the site typical for this time of year? Yes _ X _ No (If No, explain any a great street sand 0-5% slopes NWI Classificates on the site typical for this time of year? Yes _ X _ No (If No, explain and the site typical for this time of year? Yes _ X _ No (If needed, explain any a great street str	Secondary Indicators (minimu pone is required; check all that apply) Surface Soil Cracks (B6) Sparsely Vegetated Concave (B13) Sparsely Vegetated Concave (B14) Sparsely Vegetated Concave (B14) Sparsely Vegetated Concave (Convex, none): None Secondary None T Lac



(Plot size: 30 Ft

(Plot size: 6 Ft

Tree Stratum

Shrub Stratum

Herb Stratum

Vine Stratum

Juniperus virginiana

Panicum dichotomiflorum

Phragmites australis

<u>Absolute</u>

% Cover

10

10

40

30

70

Dominant

Species

Υ

=Total Cover

=Total Cover

Indicator

Status

FACU

FACW

FACW

Remarks: (Incli	ude photo numbers he	ere or on a ser	parate sheet.)

Hydrophytic vegetation present based on dominance of species that are OBL, FACW, or FAC greater than 50% and a prevalence index less than or equal to 3

Χ

No

Yes

Hydrophytic Vegetation Present? SOIL Sampling Point: WL-G-WET

Prof	Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of Indicators.)										
	pth			Matrix				Features			
(inc	ches	s)	Col	or (moist)	%	Color (moist)	%	Type	Loc 2	Texture	Remarks
0	to	4	10YR	6 / 6	100					FINE SAND	Wet fine sand
4	to	20	10YR	4 / 1	70	10YR 5/4	30	С	M	FINE SAND	Wet silty sand
¹Typ	e: C	=Con	centration,	D=Depletion,	RM=Red	uced Martix, CS=Co	overed o	r Coated	Sand Gra	ains. ² Location: PL=Pore Lin	ing, M=Matrix.
	Histo Histio Black Hydro Strati Drga Muck I cm Deple Coas Sand Sand Sand	sol (A1 c Epipe c Histic cycle S His	don (A2) (A3) ulfide (A4) yers (A5) dies (A6) (LF Mineral (A7 nnce (A8) (LF A9) (LRR P elow Dark St Surface (A1) e Redox (A1 cy Mineral (Se d Matrix (Se ox (S5) trix (S6)	RR P, T, U) () (LRR P, T, U) () (T) (Polyvalue Below S Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Ma Depleted Matrix (I Redox Dark Surface Depleted Dark Surface Redox Depression Marl (F10) (LRR U Depleted Ochric (Iron-Manganese N Delta Ochric (F17 Reduced Vertic (F17 Reduced Vertic (F17 Piedmont Floodpl Anomalous Bright	e (S9) (LR neral (F1) fatrix (F2) f3) ace (F6) arface (F7) f1) (MLF Masses (F f13) (LRR f13) (LRR f18) (MLRA f18) (MLR	R S, T, U) (LRR O) 12) (LRR () P, T, U) 151) A 150A, 1. F19) (MLF	O, P, T) 50B) RA 149A)	Indicators for Problematic 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outs Piedmont Floodplain Soils (Anomalous Bright Loamy S (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface Other (Explain in Remarks) Indicators of hydrophytic hydrology must be prese unless disturbed or prob	ide MLRA 150A,B) (F19) (LRR P, S, T) soils (F20) (TF12) (LRR T, U) vegetation and wetland
	Res	tricti	ve Layer	(if observe	d):						
1	Гуре	:								Hydric Soil Present?	Yes X No
[Deptl	h (inch	es):							nyunc 3011 Fresent:	Tes X NO
One One		turtle a	and northern	harrier observe	d in vicinity.	. Hydric soils present b	ased on s	oils meetir	ng criteria f	for the Depleted Matrix (F3) indicator.	

Project/Site: Orsted		City/County:	Ocean County Sampling Date: 8/10/2020
Applicant/Owner: Ocean Wind	- JCP&L Property		State: NJ Sampling Point: WL-H-UP
Investigators: Zak Lehmann	Ja	aclyn Chapman	Section, Township, Range S T Lacey R
Landform (hillslope, terrace, etc.):	Level	Local Relief ((concave, convex, none): None Slope(%) 0
Subregion (LRRor MLRA): LRR T		Lat: 39.810120	Long: -74.204154 Datum: WGS 1984
· · · · · · · · · · · · · · · · · · ·	its, 0 - 2% slopes	00.010120	NWI Classification: Not mapped
•	•	in this time of warm?	
Are climatic / hydrologic conditions			<u> </u>
Are Vegetation, Soil,			Are "Normal Circumstances" present? Yes X No
Are Vegetation, Soil,	Hydrology,	naturally problematic?	(If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS	- Attach a site	map showing sampling po	oint locations, transects, important features, etc.
			•
Hydrophytic Vegetation Present?	Yes X N	Is the Sampled Are	ea
Hydric Soil Present?	Yes N	within a Wetland?	Yes No X
Wetland Hydrology Present?	Yes N	o <u>X</u>	
hydrology			
HYDROLOGY			
Water Table Present?	(B7) /es No /es No /es No	Aquatic Fauna (B13) Marl Deposits (B15) (LRR U) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living for Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Thin Muck Surface (C7) Other (Explain in Remarks) X Depth (inches): X Depth (inches):	Crayfish Burrows (C8) Saturation Visible on Aerial Imag.(C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Sphagnum moss (D8) (LRR T,U) Wetland Hydrology Present? Yes No_X
Remarks: No wetland hydrology present			



	Jse scientific names o	•						-		
			Absolute % Cover	Dominant Species	Indicator Status	Dominance Test V				
Free Stratum	(Plot size: 30 Ft	_)				Number of Domina That Are OBL, FA			3	(
Juniperus virgini	ana		20	Y	FACU	- , , , , , , , , , , , , , , , , , , ,				
Pinus rigida			20	_ Y	FACU	Total Number of Do Species Across all			6	(E
Acer rubrum			10	_ Y	FAC	Openies Across an	Otrata.		0	_ ('
Shrub Stratum	(Plot size: 30 Ft	١	50	=Total Cover		Percent of Dominar		:	50.0%	(A
Viburnum dentat	•	_)	1	Υ	FAC	Prevalence Index	Workshee	:		
			1	=Total Cover		Total % Cover	of:	Multip	oly by:	
Herb Stratum	(Plot size: 6 Ft)				OBL species	0	x 1 =	0	
Phragmites aust		_ /	60	Υ	FACW	FACW species	60	x 2 =	120	
Rubus idaeus			20	Υ	FACU	·	16	x 3 =	48	
Polygonum acho	preum		5	N	FAC	FAC species	60	x 4 =	240	
			85	=Total Cover		FACU species	0	x 5 =	0	
ine Stratum_						UPL species	136	(A)	408	(
						Column Totals:	100	_(/~)	400	
						Prevalence Ir			3.00	_
						Hydrophytic Veget	ation Indic	ators:		
						1 - Rapid Test	for Hydroph	ytic Ve	getation	
						2 - Dominance	Test > 50%	, D		
						X 3 - Prevalence	Index ≤ 3.0			
						Problematic Hy	drophytic \	egetation	on (Exp	olai
						Indicators of hydric so be present, unless dis				
						Definitions of Veget	tation Stra	a:		
						Tree – Woody plants approximately 20 ft ((7.6 cm) or larger in o	m) or mor	e in hei	ght and	
						Sapling – Woody pla approximately 20 ft (6 than 3 in. (7.6 cm) Di	6 m) or mor	ng wood e in hei	dy vines ght and	, les
						Shrub – Woody plant approximately 3 to 20				
						Herb – All herbaceou herbaceous vines, re plants, except woody 3 ft (1 m) in height.	gardless of	size. In	cludes v	NOC
						Woody vine – All woo	ody vines, r	egardles	ss of he	gh
						Hydrophytic Vegetation Prese	nt? Yes	x	No	

Hydrophytic vegetation present based on pravelaence index alone

SOIL Sampling Point: WL-H-UP

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

Depth		Matrix		<u> </u>		-eatures			
(inches)		(moist)	%	Color (moist)	- %	Type	Loc 2	Texture	Remarks
0 to 4	10YR	2/1	60	10YR6/2	40	С	M	SAND	
4 to 12	10YR	6/2	60	10YR2/1	40	_C	_M	SAND	
12 to 20	10YR	5/6	100					SAND	
¹Type: C=Con	centration, D	=Depletion, l	RM=Redu	ced Martix, CS=Co	overed o	r Coated	Sand Gra	ains. ² Location: PL=Pore L	_ining, M=Matrix.
Hydric Soil I			[Polyvalue Below	Surface (S	8) (LRR S	i, T, U)	Indicators for Problemat	tic Hydric Soils: 3
Histosol (A1	•		[Thin Dark Surface	e (S9) (LR	R S, T, U)		1 cm Muck (A9) (LRR O)	<u> </u>
Histic Epipe			[Loamy Mucky Mir	neral (F1)	(LRR O)		2 cm Muck (A10) (LRR S	5)
☐ Black Histic			[Loamy Gleyed Ma	atrix (F2)			Reduced Vertic (F18) (ou	ıtside MLRA 150A,B)
Hydrogen S			[Depleted Matrix (I	=3)			Piedmont Floodplain Soil	is (F19) (LRR P, S, T)
Stratified La	iyers (A5) dies (A6) (LRR	P, T, U)	[Redox Dark Surfa	•			Anomalous Bright Loamy (MLRA 153B)	/ Soils (F20)
5 cm Mucky	Mineral (A7) (LRR P, T, U)	[Depleted Dark Su	ırface (F7)			Red Parent Material (TF2	2)
Muck Prese	nce (A8) (LRR	(U)	[Redox Depression	ns (F8)			Very Shallow Dark Surfa	•
1 cm Muck	(A9) (LRR P, T		[Marl (F10) (LRR I	J)			Other (Explain in Remark	(S)
= .	elow Dark Surf	ace (A11)	[Depleted Ochric (•	RA 151)			rtic vegetation and wetland
=	Surface (A12)			Iron-Manganese I	, ,	,) P T)	hydrology must be pre	esent,
		(MLRA 150A)		Umbric Surface (I			0,1,1)	unless disturbed or pr	oblematic.
= '	ky Mineral (S1)	(LRR O, S)	ι [_					
	ed Matrix (S4)		l r	Delta Ochric (F17		-			
Sandy Redo			Į	Reduced Vertic (F			•		
Stripped Ma	• ,	O T II)	Į	Piedmont Floodpl	ain Soils (F19) (MLF	RA 149A)		
Dark Suriac	e (S7) (LRR P	, 3, 1, 0)	[Anomalous Bright	Loamy S	oils (F20)	(MLRA 149	9A, 153C, 153D)	
Restricti	ve l aver (i	f observed):						
Type:	· · · - · · · · · · · · · · · · · · · ·		,-						
Depth (inch	es).							Hydric Soil Present?	Yes No X
Remarks:									
No hydric soil ir	ndicators prese	nt							
,									

	City/County: Oce	an County Sampling	Date: 8/10/2020
Holtec Property		State: NJ Sampling	Point: WL-H-WET
Jaclyn Cha	oman Sec	tion, Township, Range S	T Lacey R
Depression	Local Relief (conca	ave, convex, none): None	Slope(%) 0
Lat: 39.8	10053 Long	g: -74.204066	Datum: WGS 1984
n muck. 0-2 percent slopes	frequently flooded	NWI Classification: PE	M1Fh
•	• •	(If No. explain in Rer	narks)
• •		 ` · · ·	,
-	and black of a		
	(11.1		
Yes X No			
	Is the Sampled Area		
	within a Wetland?	Yes X No	
res X NO			
ce of hydrophytic vegetatic	n and presence of hydric soils	and wetland hydrology	
		Secondary Indicators (i	minimum of two required)
is required; check all that a	pply)	Surface Soil Cracks	(B6)
Aquatic	Fauna (B13)		Concave Surface (B8)
		Drainage Patterns (310)
		Moss Trim Lines (B	16)
	, ,	Dry-Season Water	Table (C2)
			8)
		Saturation Visible or	n Aerial Imag.(C9)
	, ,	Geomorphic Positio	n (D2)
		Shallow Aquitard (D	3)
37)	Aplain in Kemarks)	FAC-Neutral Test (D	05)
,		Sphagnum moss (D	8) (LRR T,U)
s No X De	pth (inches):		
	oth (inches):		
s No X De	oth (inches): oth (inches): oth (inches):	Wetland Hydrology Preser	nt? Yes X No
s No X De	oth (inches):	Wetland Hydrology Preser	nt? Yes <u>X</u> No
	Jaclyn Char Depression Lat: 39.8 In muck, 0-2 percent slopes, in the site typical for this time dydrology, significant dydrology, naturally particularly for the site typical for this time dydrology, naturally particularly for the site typical for this time dydrology, significant dydrology, naturally particularly for significant dydrology, not significant dydrology	Jaclyn Chapman Sec	Jaclyn Chapman Section, Township, Range S Depression Local Relief (concave, convex, none): None Lat: 39.810053 Long: -74.204066 In muck, 0-2 percent slopes, frequently flooded NWI Classification: PE Althorology , significantly disturbed? Are "Normal Circumstances" present/ Advorlogy , naturally problematic? (If needed, explain any answers in FA Attach a site map showing sampling point locations, transects, import Yes X No



Hydrophytic vegetation present

SOIL Sampling Point: WL-H-WET

De		inpulon. (Des	Matrix	uopiii iid			Features		The absence of indicators.					
(inc	ches)	Colo	r (moist)	%	Color (moist)	% Type ¹	Loc ²	Texture	Remarks					
0	to 4	10YR	2/1	100					LOAMY SAND	Black orga	nic			
4	to 20	10YR	2/1	100		70	CS	M	LOAMY SAND	70% particl with organi	les masked c			
1Type	e: C=Co	oncentration, I	D=Depletion,	, RM=Red	uced Martix, CS=Co	overed o	r Coated	Sand Gra	ains. ² Location: PL=Pore Linin	ng, M=Matrix.				
_		Indicators:			Polyvalue Below	Surface (S	88) (LRR S	, T, U)	Indicators for Problematic I	Hydric Soils:	3			
_	Histosol (/	A1) pedon (A2)			Thin Dark Surface	e (S9) (LR	R S, T, U)		1 cm Muck (A9) (LRR O)					
	Black Hist	,			Loamy Mucky Mir	neral (F1)	(LRR O)		2 cm Muck (A10) (LRR S)					
		Sulfide (A4)			Loamy Gleyed Ma	atrix (F2)			Reduced Vertic (F18) (outside	e MLRA 150A,E	3)			
=		Layers (A5)			Depleted Matrix (F3)			Piedmont Floodplain Soils (F	19) (LRR P, S,	T)			
		Bodies (A6) (LRI	R P, T, U)		Redox Dark Surfa	ace (F6)			Anomalous Bright Loamy Soi	ils (F20)				
	-	ky Mineral (A7)			Depleted Dark Su	ırface (F7)		(MLRA 153B) Red Parent Material (TF2)					
	∕luck Pre	sence (A8) (LR	R U)		Redox Depression	•			Very Shallow Dark Surface (1	TF12) (I RR T I	D.			
1	cm Muc	k (A9) (LRR P,	T)		Marl (F10) (LRR I	. ,			Other (Explain in Remarks)	12) (21(1(1), (•)			
	Depleted	Below Dark Sur	rface (A11)		Depleted Ochric (•	DA 151)							
		k Surface (A12)				, , ,	,) D T)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.					
		airie Redox (A16		١)	Iron-Manganese I	,	, ,	J, P, 1)						
	-	ıcky Mineral (S1			Umbric Surface (I									
_	-	eyed Matrix (S4)		Delta Ochric (F17) (MLRA 151)									
_	Sandy Re	` ,			Reduced Vertic (F	=18) (MLR	A 150A, 1	50B)						
		Matrix (S6)			Piedmont Floodpl	lain Soils ((F19) (MLR	A 149A)						
V)ark Surfa	ace (S7) (LRR I	P, S, T, U)		Anomalous Bright	t Loamy S	oils (F20) (MLRA 149	9A, 153C, 153D)					
□ F	Restric	tive Layer (if observe	d):										
Т	Гуре:								Hydria Sail Brasant?	Voc. V	No			
	Depth (inc	ches):							Hydric Soil Present? Yes X No					
Remar	ks:													
0-4 i	nches co	nsists of a blac	k organic sedin	nent. Hydric	soils present.									

(Plot size: 30 Ft)

(Plot size: 6 Ft)

(Plot size: 30 Ft)

Tree Stratum

Shrub Stratum

Herb Stratum

Vine Stratum

Rhus copallinum

Solidago altissima

Lonicera japonica

Toxicodendron radicans

Parthenocissus quinquefolia

Phragmites australis

Rosa rugosa

<u>Absolute</u>

% Cover

60

30

90

40

10

50

30

15

10

Dominant

Species

=Total Cover

Υ

Ν

=Total Cover

Υ

Υ

Ν

=Total Cover

Status

UPL

FACU

FACU

FACW

FACU

FAC

FACU

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

Negative for prevalence index and dominance test

Yes

No

Χ

Hydrophytic Vegetation Present? SOIL Sampling Point: OP1-WA-UP

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

Depth	1		Matrix			Redox F	eatures					
(inche		Color	(moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Re	emarks	
0 to	5	10YR	3/1	50	10YR 6/1	50	С	М	SAND	Organic	s	
5 to	12	10YR	3/4	100					SAND			
12 to	20	10YR	3/3	100					SAND			
¹Type:	C=Con	centration, D	=Depletion,	RM=Redu	uced Martix, CS=Co	overed or	Coated	Sand Gra	ains. ² Location: PL=Pore L	ining, M=Matr	ix.	
_		ndicators:			Polyvalue Below S	Surface (S	8) (LRR S.	T, U)	Indicators for Problemat	ic Hydric So	ils: 3	
_	tosol (A1	*			Thin Dark Surface	e (S9) (LR	R S, T, U)		1 cm Muck (A9) (LRR O)			
\equiv	tic ⊑pipe ck Histic	edon (A2)			Loamy Mucky Mir	eral (F1) (LRR O)		2 cm Muck (A10) (LRR S)		
		sulfide (A4)			Loamy Gleyed Ma	atrix (F2)			Reduced Vertic (F18) (ou	tside MLRA 150)A,B)	
= '	-	ayers (A5)		1	Depleted Matrix (F	=3)			Piedmont Floodplain Soil	s (F19) (LRR P,	S, T)	
		dies (A6) (LRR	P, T, U)		Redox Dark Surfa	ice (F6)			Anomalous Bright Loamy (MLRA 153B)	Soils (F20)		
5 cr	n Mucky	Mineral (A7)	(LRR P, T, U)		Depleted Dark Su	rface (F7)			Red Parent Material (TF2	1		
Mud	ck Prese	ence (A8) (LRF	R U)	ĺ	Redox Depression				Very Shallow Dark Surface	•	T. U)	
1 cr	m Muck	(A9) (LRR P, 1	Γ)		Marl (F10) (LRR U	. ,			Other (Explain in Remark		, -,	
Dep	oleted Be	elow Dark Surf	ace (A11)	·	Depleted Ochric (-	RA 151)		3 Indicators of hydrophyl	•		
_		Surface (A12)		·	Iron-Manganese N	, ,	,) P T)	hydrology must be pre		ia wetiana	
		e Redox (A16)) '	Umbric Surface (F	•	, ,	Σ, Γ, Τ)	unless disturbed or pro	blematic.		
	-	ky Mineral (S1)	(LRR O, S)				-					
	ndy Gley ndy Redd	ed Matrix (S4)			Delta Ochric (F17			-0D)				
_	•	ox (S5) atrix (S6)			Reduced Vertic (F	, ,		,				
		unx (36) ce (S7) (LRR P	S T II)		Piedmont Floodpl	•		•				
Dai	K Guriac	e (O7) (LITITI	, 0, 1, 0)		Anomalous Bright	Loamy So	oils (F20) (MLRA 149	9A, 153C, 153D)			
		ve Layer (i	f observed	i):								
Typ Dep	e: oth (inch	es):							Hydric Soil Present?	Yes	No	X
Remarks:	:											
No hyd	ric soil ir	ndicators obse	rved									

Project/Site: Or	sted			City/Coun	ty: Ocean	County	Sampling Date:	6/24/2019
Applicant/Owner:	Ocean Wind	- Farm Pro	perty			State: NJ	Sampling Point:	OP2-WA-WET
Investigators: [David Brizzolara	ì	Zachary	/ Lehmann	Section	n, Township, Rang	e S TLac	cey R
Landform (hillslope,	terrace, etc.):	Dej	oression	L	ocal Relief (concave	, convex, none): (Concave	Slope(%)
Subregion (LRRor N	MLRA): LRR	 Г	Lat:	39.815017	Long:	-74.165943	Datur	n: Decimal Degrees
Soil Map Unit Name	· —		 -	illion complex			cation: E2EM5P	
Are climatic / hydrol	logic conditions	on the site	typical for this	time of year?	Yes X No	(If No, ex	plain in Remarks)	
Are Vegetation	-			-	Are "No	ormal Circumstance		s X No
Are Vegetation						eded, explain any a		
SUMMARY OF	FINDINGS	- Attach	a site map	showing san	npling point loc			
Hydrophytic Vege	tation Present?	Yes	X No					
Hydric Soil Preser	nt?	Yes	X No		ampled Area Wetland?			
Wetland Hydrolog	y Present?	Yes	X No	Within a	wetiand?	Yes	X No	
wetland hydrology	an prosont.							
HYDROLOGY								ım of two required)
Primary Indicators Surface Water (A' High Water Table Saturation (A3) Water Marks (B1) Sediment Deposit Drift Deposits (B3) Algal Mat or Crust Iron Deposits (B5) Inundation Visible Water-Stained Le Field Observations Surface Water Pres	1) (A2) (S (B2)) t (B4)) on Aerial Imager aves (B9)	y (B7)	Aqu Ma Hyc Oxi Pre Rec Oth	uatic Fauna (B13) rl Deposits (B15) (Lf drogen Sulfide Odor dized Rhizospheres sence of Reduced Ir cent Iron Reduction i n Muck Surface (C7 ner (Explain in Rema	(C1) along Living Roots (C3) on (C4) in Tilled Soils (C6)	Sparse Draina Moss 7 Dry-Se Crayfis Satura Geome	e Soil Cracks (B6) ely Vegetated Concav ge Patterns (B10) Trim Lines (B16) eason Water Table (C sh Burrows (C8) tion Visible on Aerial prephic Position (D2) w Aquitard (D3) leutral Test (D5) num moss (D8) (LRF	C2) Imag.(C9)
Water Table Preser		Yes Yes X	No X	Depth (inches):				
Saturation Present?		Yes <u>X</u> Yes X	No	Depth (inches): Depth (inches):	0	Wetland Hydrol	ogy Present?	Yes _X_ No
(includes capillary fr Describe Recorded Da	ringe)							
Remarks: Wetland hydrology ind	icators present							



(Plot size: 6 Ft)

Tree Stratum

Shrub Stratum

Herb Stratum

Vine Stratum

Phragmites australis

<u>Absolute</u>

% Cover

70

Dominant

Species

=Total Cover

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

Hydrophytic vegetation present based on dominance test and prevalence index

Yes

No

Hydrophytic Vegetation Present? SOIL Sampling Point: OP2-WA-WET

Depth	ption: (Des	Matrix	depth nee	eded to documen		eatures	confirm t	the absence of Indicators.)	
(inches)	Color	(moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 20	10YR	2/1	100					SAND	Fiborous muck
¹Type: C=Cond	centration, D	=Depletion,	RM=Redu	ced Martix, CS=Co	overed or	Coated S	Sand Grai	ins. ² Location: PL=Pore Lining,	M=Matrix.
5 cm Mucky Muck Prese 1 cm Muck (Depleted Be Thick Dark (Coast Prairi Sandy Muck Sandy Gleye Sandy Redo Stripped Ma	don (A2) (A3) ulfide (A4) yers (A5) dies (A6) (LRR Mineral (A7) (nce (A8) (LRR P, T elow Dark Surf Surface (A12) e Redox (A16) ty Mineral (S1) ed Matrix (S4)	LRR P, T, U) U) ace (A11) (MLRA 150A) (LRR O, S)		Polyvalue Below S Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfa Depleted Dark Surfa Depleted Dark Surfa Redox Depression Marl (F10) (LRR U Depleted Ochric (Iron-Manganese N Umbric Surface (F Delta Ochric (F17 Reduced Vertic (F Piedmont Floodpl Anomalous Bright	e (S9) (LRI neral (F1) (atrix (F2) F3) ace (F6) urface (F7) ns (F8) J) F11) (MLF Masses (F- F13) (LRR r) (MLRA 1 F18) (MLRA 1	R S, T, U) LRR O) 12) (LRR O P, T, U) 51) A 150A, 15 F19) (MLRA	, P, T) 0B) A 149A)	Indicators for Problematic Hy 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outside Mark of the priedmont Floodplain Soils (F19) Anomalous Bright Loamy Soils (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (TF1) Other (Explain in Remarks) 3 Indicators of hydrophytic vegon hydrology must be present, unless disturbed or problematics. A, 153C, 153D)	MLRA 150A,B)) (LRR P, S, T) (F20) 12) (LRR T, U) etation and wetland
Restricti Type: Depth (inche	ve Layer (i	f observed	i):					Hydric Soil Present? Ye	es <u>X</u> No
Remarks: Hydric soil indic	· <u>-</u>								

Project/Site: Orsi	iea				unty:	Ocean	County	Sampling Date	. 6/2//2019	
Applicant/Owner:	Ocean Wind	- Farm Property	y			;	State: NJ_	Sampling Point	: OP-WC-UP	
Investigators: Da	avid Brizzolara		Zachar	y Lehmann		Section	n, Township, Rang	e S TLa	icey R	
Landform (hillslope, t	errace, etc.):	Terrace)		Local Relief	(concave,	convex, none): 1	None	Slope(%)	0-2%
Subregion (LRRor MI	LRA): LRR T		Lat:	39.814399		Long:	-74.175766	Datu	 ım: Decimal Degr	rees
Soil Map Unit Name:	Berryland	sand					NWI Classific	cation: PFO1Bo	1	
Are climatic / hydrolo			cal for this	s time of year?	Yes X	No	_	plain in Remarks		
-	-			•				•	,	•
Are Vegetation						Ale No	rmal Circumstance	es present:	es X No	, —
Are Vegetation	_, Soil,	Hydrology	, natur	ally problemati	C?	(If nee	eded, explain any a	ınswers in Remai	rks.)	
SUMMARY OF	FINDINGS	- Attach a si	ite map	showing s	ampling po	oint loca	ations, transe	cts, importan	it features, c	etc.
Hydrophytic Vegeta	ation Present?	Yes X	No							
Hydric Soil Present		Yes			Sampled Are					
Wetland Hydrology				WILIII	n a Wetland?		Yes	NoX	(
		Yes	No>	(
Remarks: Filled area next to be	ormed trail									
Tilled area riext to be	errifed trail.									
HYDROLOGY										
Wetland Hydrology	Indicators:						Secondary	Indicators (minim	um of two requ	ired)
Primary Indicators (r	minimum of on	e is required; c	heck all th	nat apply)			☐ Surfac	e Soil Cracks (B6)		
Surface Water (A1)				uetie Feure (B10)				ely Vegetated Conca	ave Surface (B8)	
High Water Table (A				uatic Fauna (B13)			= '	ge Patterns (B10)	(=0)	
Saturation (A3)				arl Deposits (B15)				Frim Lines (B16)		
Water Marks (B1)				drogen Sulfide Od	` '			ason Water Table (C2)	
	(DO)			idized Rhizosphe		Roots (C3)		th Burrows (C8)	02)	
Sediment Deposits	(D2)		∐ Pre	esence of Reduce	d Iron (C4)			tion Visible on Aeria	al Imag (CO)	
Drift Deposits (B3)	D4)			cent Iron Reduction		(C6)			.i imag.(C9)	
Algal Mat or Crust (В4)		☐ Th	in Muck Surface ((C7)			orphic Position (D2)		
Iron Deposits (B5)		(5-7)	Otl	ner (Explain in Re	emarks)			w Aquitard (D3)		
Inundation Visible o		(B7)						leutral Test (D5)	D.T.I.	
Water-Stained Leav	/es (B9)						Sphag	num moss (D8) (LR	R I,U)	
Field Observations:	ı									
Surface Water Preser	nt? Y	/es No	X	Depth (inches):	<u> </u>					
Water Table Present?	? }	/es No	X	Depth (inches):	·					
Saturation Present?	Υ	res No	X	Depth (inches):			Wetland Hydrol	ogy Present?	Yes No)_X_
(includes capillary frin		monitoring well a	orial photo	s provious inspo	otions) if availab	alo:				
Describe Recorded Data	i (stream gauge,	monitoring well, a	teriai prioto	s, previous inspe	ctions), if availab	ne:				
Remarks:										
No wetland hydrology in	dicators present									
,										



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

Hydric vegetation present based on dominance test and prevalence index

Yes

No

Vegetation Present?

SOIL Sampling Point: OP-WC-UP

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

Dept	า		Matrix			Redox	Features			
(inch		Color	(moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to	2	10YR	3/2	100					SAND	High root content
2 to	10	10YR	2/1	100					SAND	
10 to	20	10YR	2/1	80	10YR 4/1	20	D	М	SANDY LOAM	<u> </u>
¹Type:	C=Con	centration, D)=Depletion,	RM=Red	uced Martix, CS=C	overed o	r Coated	Sand Gra	ains. ² Location: PL=Pore Lini	ng, M=Matrix.
His His His His His Hy	tosol (A1 tic Epipe ck Histic drogen S atified La ganic Boo m Mucky ck Prese m Muck pleted Be ck Dark	idon (A2) (A3) ulfide (A4) uyers (A5) dies (A6) (LRF Mineral (A7) ince (A8) (LRF (A9) (LRR P, Telow Dark Surface (A12)	(LRR P, T, U) R U) Γ) face (A11))	Polyvalue Below Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Ma Depleted Matrix (Redox Dark Surfa Depleted Dark Su Redox Depressio Marl (F10) (LRR I Depleted Ochric (Iron-Manganese	e (S9) (LF neral (F1) atrix (F2) F3) ace (F6) urface (F7 ns (F8) J)	RR S, T, U) (LRR O)) RA 151)		Indicators for Problematic 1 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outsic Piedmont Floodplain Soils (F Anomalous Bright Loamy So (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (Other (Explain in Remarks) 3 Indicators of hydrophytic whydrology must be presen unless disturbed or proble	de MLRA 150A,B) F19) (LRR P, S, T) oils (F20) TF12) (LRR T, U) vegetation and wetland
Sa Sa Str Da	ndy Muck ndy Gley ndy Redd ipped Ma rk Surfac estricti	xy Mineral (S1 ed Matrix (S4) ox (S5) atrix (S6) ee (S7) (LRR F) (LRR O, S)		Umbric Surface (I Delta Ochric (F17 Reduced Vertic (I Piedmont Floodpi Anomalous Brigh	') (MLRA =18) (MLF lain Soils	151) RA 150A, 15 (F19) (MLR	A 149A)	·	Yes No _X
Remarks No hyd		ndicators prese	ent							

Project/Site: Orsted	1			City/Coun	nty: Ocea	n County		Sampling Date:	6/27/2019
Applicant/Owner: C	cean Wind - Far	m Property	,			State:	NJ	Sampling Point:	OP-WC-WET
Investigators: Davi	d Brizzolara		Zachary Leh	ımann	Section	on, Townshi _l	p, Range	S TLac	cey R
Landform (hillslope, teri	ace, etc.):	Toe of S	Slope	L	 _ocal Relief (concav	e, convex, n	one): C	oncave	Slope(%) 0-2%
Subregion (LRRor MLR	A): LRR T		Lat: 39.8	14365	Long	: -74.17575	 52	Datu	m: Decimal Degrees
Soil Map Unit Name:	Berryland sand	b						ation: PFO1Bd	
Are climatic / hydrologic	conditions on th	ne site typic	al for this time	e of year?	Yes X No	(1	f No, exp	olain in Remarks)	
Are Vegetation,	Soil, Hyd	drology	, significant	ly disturbed?	? Are "N	lormal Circu	mstance	s" present? Ye	es X No
Are Vegetation,	Soil, Hyd	drology	, naturally p	roblematic?	(If ne	eeded, expla	ain any ar	nswers in Remark	ks.)
SUMMARY OF FI	NDINGS - At	tach a si	te map sho	owing sar	npling point lo	cations, t	ransec	ts, importan	t features, etc.
Hydrophytic Vegetation	n Present? '	Yes X	No						
Hydric Soil Present?		Yes X	No		Sampled Area				
Wetland Hydrology Pr	rocent?	Yes X	No	within a	a Wetland?	`	Yes	X No	
Remarks:									
HYDROLOGY									
Wetland Hydrology In		and the state of the		I - A		Sec	ondary Ir	ndicators (minimu	um of two required)
Primary Indicators (mir	ilmum of one is r	requirea; cr	ieck all triat af	оріу)			_	Soil Cracks (B6)	
Surface Water (A1)			Aquatic F	auna (B13)			= '	y Vegetated Conca	ve Surface (B8)
High Water Table (A2)	i		Marl Dep	oosits (B15) (L	RR U)		_	e Patterns (B10)	
Saturation (A3)			_ ′ °	n Sulfide Odor	, ,			rim Lines (B16)	20)
Water Marks (B1)	2)		_		along Living Roots (C	3)	_	ason Water Table (C	,2)
Sediment Deposits (B2 Drift Deposits (B3)	2)			e of Reduced I	* *		_	n Burrows (C8) on Visible on Aerial	Imag (CO)
Algal Mat or Crust (B4	١				in Tilled Soils (C6)		_	rphic Position (D2)	illag.(C9)
Iron Deposits (B5))		_	ck Surface (C7			_	Aquitard (D3)	
Inundation Visible on A	Aerial Imagery (B7)		U Other (E	xplain in Rema	arks)		_	eutral Test (D5)	
✓ Water-Stained Leaves							_	um moss (D8) (LRF	2 T I I \
	(D3)						Opilagii	um moss (Do) (Em	
Field Observations:	.,		5						
Surface Water Present?		No		oth (inches):					
Water Table Present? Saturation Present?	Yes	X No		oth (inches):	6	Wetland	Hvdrolo	gy Present?	Yes _X_ No
(includes capillary fringe	Yes)	X_ No	Det	oth (inches):	0	Wotania	,	,gy 1 10001111	.00 <u>A</u> .10
Describe Recorded Data (s	/	toring well, a	erial photos, pre	vious inspectio	ons), if available:				
Remarks:									
Wetland hydrology indicato	rs present								
Wolland Hydrology maloato	ro procent								



(Plot size: 30 Ft)

(Plot size: 30 Ft)

(Plot size: 6 Ft

Tree Stratum

Shrub Stratum

Herb Stratum

Vine Stratum

Acer rubrum

Vaccinium corymbosum

Sassafras albidum

Phragmites australis

Osmundastrum cinnamomeum

<u>Absolute</u>

% Cover

35

30

5

35

95

5

100

Dominant

Species

Υ

=Total Cover

Υ

Ν

=Total Cover

Υ

Ν

=Total Cover

Indicator

Status

FAC

FACW

FACU

FACW

FACW

Hydrophytic vegetation present based on dominance test and prevalence index

Woody vine – All woody vines, regardless of height.

Yes

No

Hydrophytic Vegetation Present? SOIL Sampling Point: OP-WC-WET

Depth	·	Matrix	•	_	Redox F	eatures	confirm	<u> </u>	
(inches)	Color	(moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 4	10YR	2/1	100			CS		SANDY LOAM	organic layer - mucky texture
4 to 20	10YR	2/1	100					SAND	
¹Type: C=Cor	centration, [D=Depletion,	RM=Red	uced Martix, CS=Co	overed or	Coated S	Sand Gra	ains. ² Location: PL=Pore	Lining, M=Matrix.
Muck Prese I tem Muck Depleted B Thick Dark Coast Prair Sandy Muc Sandy Gley Sandy Red Stripped Ma	edon (A2) c (A3) Sulfide (A4) ayers (A5) dies (A6) (LRF y Mineral (A7) ence (A8) (LRF (A9) (LRR P, elow Dark Sur Surface (A12) die Redox (A16 ky Mineral (S1) red Matrix (S4) ox (S5)	(LRR P, T, U) R U) T) face (A11)) (MLRA 150A) (LRR O, S)		Polyvalue Below S Thin Dark Surface Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfa Depleted Dark Su Redox Depression Marl (F10) (LRR U Depleted Ochric (I Iron-Manganese N Umbric Surface (F Delta Ochric (F17) Reduced Vertic (F	e (S9) (LRi eral (F1) (trix (F2) F3) ce (F6) rface (F7) ns (F8) J) F11) (MLF Alasses (F13) (LRR) (MLRA 1 F18) (MLRA 1 F18) (MLRA 1	R S, T, U) LRR O) 12) (LRR C P, T, U) 51) A 150A, 15 F19) (MLR	0, P, T) 0B) A 149A)	hydrology must be p unless disturbed or p	D) S) S) Sutside MLRA 150A,B) bils (F19) (LRR P, S, T) ny Soils (F20) F2) ace (TF12) (LRR T, U) rks) nytic vegetation and wetland
	ive Layer (if observe	d):	Anomalous Bright	Loanly St	Jiis (i 20) (i	VILITA 143	96, 1330, 1330)	
Type:	noe).							Hydric Soil Present?	Yes X No
Depth (inch Remarks:	ies):								
Hydric soils pre	esent								

Project/Site: Orsted		City/County:	Ocean County Sampling Date: 6/27/2019
Applicant/Owner: Ocean W	ind - Farm Property		State: NJ Sampling Point: OP-WDE-UP
Investigators: David Brizzo	lara Zachary Le	hmann	Section, Township, Range S T Lacey R
Landform (hillslope, terrace, etc	c.): Terrace	Local Relief (concave, convex, none): None Slope(%) 0-2%
Subregion (LRRor MLRA): LR	R T Lat: 39.8	311729	Long: -74.170307 Datum: Decimal Degrees
Soil Map Unit Name: Appoo	quinimink-Transquaking-Mispillio	n complex	NWI Classification: E2EM5P
	ons on the site typical for this tim		No (If No, explain in Remarks)
	, Hydrology, significar		Are "Normal Circumstances" present? Yes X No
	, Hydrology, naturally		· — —
_			(If needed, explain any answers in Remarks.)
SUMMARY OF FINDING	3S - Attach a site map sh	owing sampling po	int locations, transects, important features, etc.
Hydrophytic Vegetation Prese	nt? Yes X No		
Hydric Soil Present?	Yes No X	Is the Sampled Area within a Wetland?	
Wetland Hydrology Present?	Yes No X	within a welland?	Yes NoX
Remarks:			
Upland Island			
opiana ioiana			
HYDROLOGY			
Wetland Hydrology Indicator	rs:		Secondary Indicators (minimum of two required)
· Si	of one is required; check all that a	apply)	Surface Soil Cracks (B6)
Surface Water (A1)			Sparsely Vegetated Concave Surface (B8)
Surface Water (A1)		Fauna (B13)	Drainage Patterns (B10)
High Water Table (A2)	Marl De	eposits (B15) (LRR U)	
Saturation (A3)	☐ Hydroge	en Sulfide Odor (C1)	Moss Trim Lines (B16)
Water Marks (B1)	Oxidize	d Rhizospheres along Living R	
Sediment Deposits (B2)	Present	ce of Reduced Iron (C4)	Crayfish Burrows (C8)
Drift Deposits (B3)	Recent	Iron Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imag.(C9)
Algal Mat or Crust (B4)	☐ Thin M	uck Surface (C7)	Geomorphic Position (D2)
Iron Deposits (B5)		Explain in Remarks)	Shallow Aquitard (D3)
Inundation Visible on Aerial Ima		 ,	FAC-Neutral Test (D5)
Water-Stained Leaves (B9)			Sphagnum moss (D8) (LRR T,U)
Field Observations:			
Surface Water Present?	Yes No X De	epth (inches):	
Water Table Present?		epth (inches):	
Saturation Present?	Yes No X De	epth (inches):	Wetland Hydrology Present? Yes No_X_
(includes capillary fringe)			
Describe Recorded Data (stream gau	uge, monitoring well, aerial photos, pr	evious inspections), if available	9:
Remarks:			
No wetland hydrology indicators pres	sent		



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

Hydrophytic vegetation present based on dominance test > 50%

US Army Corps of Engineers

Yes

No

SOIL Sampling Point: OP-WDE-UP

Redox Features

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

Matrix

Depth

(inches)	Colo	r (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	
0 to 8	10YR	2/1	100					SAND		
8 to 14	10YR	4/2	80	10yr 3/4	20	С	M	SANDY LOAM	_	
14 to 20	10YR	8/3	60	10yr 5/8	40	С	M	SAND		
¹Type: C=Cond	centration, [D=Depletion,	RM=Red	luced Martix, CS=Co		r Coated	Sand Gra	nins. ² Location: PL=Pore Linir	ng, M=Matrix.	
5 cm Mucky Muck Prese 1 cm Muck (Depleted Be Thick Dark S Coast Prairie Sandy Muck Sandy Gleye	don (A2) (A3) ulfide (A4) yers (A5) dies (A6) (LRF Mineral (A7) nce (A8) (LRR A9) (LRR P, elow Dark Sur Surface (A12) e Redox (A16 by Mineral (S1 ed Matrix (S4)	(LRR P, T, U) R U) T) face (A11) S) (MLRA 150A)		Polyvalue Below S Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surface Depleted Dark Su Redox Depression Marl (F10) (LRR U Depleted Ochric (F17) Iron-Manganese M Umbric Surface (F	e (S9) (LRi neral (F1) (atrix (F2) F3) ace (F6) urface (F7) ns (F8) J) F11) (MLF Masses (F F13) (LRR 1) (MLRA 1	R S, T, U) (LRR O) RA 151) 12) (LRR C P, T, U)), P, T)	Indicators for Problematic I 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outsid Piedmont Floodplain Soils (F Anomalous Bright Loamy So (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (* Other (Explain in Remarks) Indicators of hydrophytic we hydrology must be presen unless disturbed or problemarks (AP)	de MLRA 150A,B) F19) (LRR P, S, T) iils (F20) TF12) (LRR T, U) regetation and wetland it,	
Sandy Redo				Reduced Vertic (F	-18) (MLR	A 150A, 15	50B)			
Stripped Ma	` '			Piedmont Floodpl	ain Soils (F19) (MLR	A 149A)			
☐ Dark Surfac	e (S7) (LRR F	P, S, T, U)		Anomalous Bright	Loamy S	oils (F20) (MLRA 149	A, 153C, 153D)		
	ve Layer (if observed	i):							
Type:								Hydric Soil Present?	Yes No	X
Depth (inche	es):									
Remarks: No hydric soils p	present									

Project/Site: O	rsted		City/C	ounty: Ocean	County	Sampling Date:	6/27/2019
Applicant/Owner:	Ocean Wind - F	arm Property		5	State: NJ	Sampling Point:	OP-WD-WET
Investigators:	David Brizzolara	Z	achary Lehmann	Section	, Township, Range	je S TLac	cey R
Landform (hillslope	e, terrace, etc.):	Depressio	n	Local Relief (concave,	convex, none): (Concave	Slope(%) 0-2%
Subregion (LRRor	MLRA): LRR T		Lat: 39.812020	- Long:	-74.170243	Datur	n: Decimal Degrees
Soil Map Unit Nam	· · · · · · · · · · · · · · · · · · ·	ink-Transquakin	g-Mispillion complex			cation: E2EM5P	
Are climatic / hydro	ologic conditions or	the site typical	for this time of year'	? Yes X No	(If No, ex	plain in Remarks)	
Are Vegetation _	, Soil, H	lydrology,	significantly disturb	ped? Are "Nor	mal Circumstance	es" present? Ye	s X No
Are Vegetation _	, Soil, H	lydrology,	naturally problemat	tic? (If need	ded, explain any a	answers in Remark	(s.)
SUMMARY O	F FINDINGS - 1	Attach a site	map showing	sampling point loca	ıtions, transe	cts, important	features, etc.
Hydrophytic Vege	etation Present?	Yes X N	lo				
Hydric Soil Prese		Yes X N		e Sampled Area			
Wetland Hydrolo	gy Present?		lo with	in a Wetland?	Yes	X No	
Remarks:							
HYDROLOGY							
Wetland Hydrolo					Secondary	Indicators (minimu	ım of two required)
Primary Indicators	s (minimum of one i	is required; chec	k all that apply)			e Soil Cracks (B6)	
Surface Water (A	,		Aquatic Fauna (B1	3)	= :	ely Vegetated Concav	re Surface (B8)
High Water Table	e (A2)		Marl Deposits (B15	5) (LRR U)		age Patterns (B10)	
Saturation (A3)			Hydrogen Sulfide C	Odor (C1)		Trim Lines (B16)	
Water Marks (B1	,		Oxidized Rhizosph	eres along Living Roots (C3)		eason Water Table (C	(2)
Sediment Depos	, ,		Presence of Reduc	ed Iron (C4)		sh Burrows (C8)	
✓ Drift Deposits (B			Recent Iron Reduc	tion in Tilled Soils (C6)		ation Visible on Aerial	Imag.(C9)
Algal Mat or Crus	, ,		Thin Muck Surface	e (C7)		orphic Position (D2)	
Iron Deposits (B	· ·		Other (Explain in R	Remarks)		w Aquitard (D3)	
=	e on Aerial Imagery (B	·/)			=	Neutral Test (D5)	· -
✓ Water-Stained L	. , ,				Sphagi	num moss (D8) (LRF	1 I,U)
Field Observation	<u>-</u>						
Surface Water Pre			X Depth (inches	-			
Water Table Prese			X Depth (inches	· —	Watland Hudual	amy Duagant?	Voc. V. No.
Saturation Present		s <u>X</u> No _	Depth (inches	<u> </u>	Wetland Hydrol	ogy Present?	Yes X No
		onitoring well, aeria	al photos, previous insp	ections), if available:			
Remarks:							
Wetland hydrology pr	esent						



EGETATION Use scientific names of plants.				Sampl	ing Point:	: OP-V	VD-WET	<u> </u>
	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Wo	rksheet:			
Tree Stratum				Number of Dominant That Are OBL, FACV			3	(A)
Shrub Stratum (Plot size: 30 Ft Vaccinium corymbosum	25	Υ	FACW	Total Number of Dom Species Across all St			2	(D)
	25	=Total Cover	-	Species Across air St	Tala.		3	(B) -
Herb Stratum (Plot size: 6 Ft)		_	54 OM	Percent of Dominant That Are OBL, FACW		: _	100.0%	(A/B)
Phragmites australis Onoclea sensibilis		_ <u>Y</u> _	FACW	Prevalence Index W	orksheet	t:		
Officied Settsibilis	150			Total % Cover of:		Multip	oly by:	
Vino Stratum		=Total Cover		OBL species	0	x 1 =	0	
Vine Stratum				FACW species	175	x 2 =	350	
				FAC species	0	x 3 =	0	
				FACU species	0	x 4 =	0	 -
				UPL species	0	x 5 =	0	
				Column Totals:	175	(A)	350	(B)
				Prevalence Inde	ex = B/A=	=	2.00	
				Hydrophytic Vegetati	on Indic	ators:		
				1 - Rapid Test for	r Hydroph	nytic Ve	getation	
				X 2 - Dominance Te	est > 50%	6		
				X 3 - Prevalence In	dex ≤ 3.0)		
				Problematic Hydr	ophytic V	/egetatio	on (Exp	olain)
				Indicators of hydric soil a be present, unless distu				
				Definitions of Vegetat	ion Strat	ta:		
				Tree – Woody plants, e approximately 20 ft (6 r (7.6 cm) or larger in dia	n) or mor	e in héi	ght and	
				Sapling – Woody plants approximately 20 ft (6 r than 3 in. (7.6 cm) DBH	n) or mor	· · · ·		
				Shrub – Woody plants, approximately 3 to 20 fi	excluding t (1 to 6 n	g woody n) in hei	vines, ght.	
				Herb – All herbaceous herbaceous vines, rega plants, except woody vi 3 ft (1 m) in height.	ardless of	size. In	cludes v	voody
				Woody vine – All wood	y vines, r	egardles	ss of hei	ght.
				Hydrophytic	•			

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

Hydrophytic vegetation present based on dominance test and prevalence index

SOIL Sampling Point: OP-WD-WET

Depth Matrix	Redox Features	the absence of mulcators.)	
	% Color (moist) % Type ¹ Loc ²	Texture	Remarks
0 to 4 10YR 2/1 10	00	SAND	roots
4 to 20 10YR 2/1 10	00	SAND	
¹ Type: C=Concentration, D=Depletion, RM=	=Reduced Martix, CS=Covered or Coated Sand Gra	ains. ² Location: PL=Pore Lining.	, M=Matrix.
Hydric Soil Indicators: ☐ Histosol (A1) ☐ Histic Epipedon (A2) ☐ Black Histic (A3) ☑ Hydrogen Sulfide (A4) ☐ Stratified Layers (A5) ☐ Organic Bodies (A6) (LRR P, T, U) ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U) ☐ Muck Presence (A8) (LRR U) ☐ 1 cm Muck (A9) (LRR P, T) ☐ Depleted Below Dark Surface (A11) ☐ Thick Dark Surface (A12) ☐ Coast Prairie Redox (A16) (MLRA 150A) ☐ Sandy Mucky Mineral (S1) (LRR O, S) ☐ Sandy Gleyed Matrix (S4) ☐ Sandy Redox (S5) ☐ Stripped Matrix (S6) ☐ Dark Surface (S7) (LRR P, S, T, U)	Polyvalue Below Surface (S8) (LRR S, T, U) Thin Dark Surface (S9) (LRR S, T, U) Loamy Mucky Mineral (F1) (LRR O) Loamy Gleyed Matrix (F2) Depleted Matrix (F3) Redox Dark Surface (F6) Depleted Dark Surface (F7) Redox Depressions (F8) Marl (F10) (LRR U) Depleted Ochric (F11) (MLRA 151) Iron-Manganese Masses (F12) (LRR O, P, T) Umbric Surface (F13) (LRR P, T, U) Delta Ochric (F17) (MLRA 151) Reduced Vertic (F18) (MLRA 150A, 150B) Piedmont Floodplain Soils (F19) (MLRA 149A) Anomalous Bright Loamy Soils (F20) (MLRA 149A)	Indicators for Problematic Hy 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outside I Piedmont Floodplain Soils (F19 Anomalous Bright Loamy Soils (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (TF Other (Explain in Remarks) 3 Indicators of hydrophytic veg hydrology must be present, unless disturbed or problematics.	MLRA 150A,B) 9) (LRR P, S, T) (F20) 112) (LRR T, U) getation and wetland
Restrictive Layer (if observed): Type: Depth (inches): Remarks: Hydric soils present		Hydric Soil Present? Y	es <u>X</u> No

Project/Site: Orsted		City/County:	Ocean County Sampling Date: 6/26/2019
Applicant/Owner: Ocean	Wind - Farm Property		State: NJ Sampling Point: OP-WE-UP
Investigators: David Briz	zolara Za	chary Lehmann	Section, Township, Range S T Lacey R
Landform (hillslope, terrace,	etc.): Terrace	Local Relief	(concave, convex, none): None Slope(%) 0-2%
Subregion (LRRor MLRA):	LRR T L	at: 39.812156	Long: -74.186940 Datum: Decimal Degrees
Soil Map Unit Name: Ber	ryland sand		NWI Classification: E2EM5P
Are climatic / hydrologic cond	ditions on the site typical fo	r this time of year? Yes X	No (If No, explain in Remarks)
Are Vegetation, Soil			Are "Normal Circumstances" present? Yes X No
Are Vegetation, Soil			· ——
			(If needed, explain any answers in Remarks.)
SUMMARY OF FINDI	NGS - Attach a site r	nap snowing sampling po	oint locations, transects, important features, etc.
Hydrophytic Vegetation Pre	sent? YesNo		
Hydric Soil Present?	YesNo	X Is the Sampled Arwithin a Wetland?	
Wetland Hydrology Present	? YesNo	X	165 NO X
HYDROLOGY			
Wetland Hydrology Indica	tors:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial I Water-Stained Leaves (B9) Field Observations:		all that apply) Aquatic Fauna (B13) Marl Deposits (B15) (LRR U) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Thin Muck Surface (C7) Other (Explain in Remarks)	Crayfish Burrows (C8)
Surface Water Present?	Yes No)	(Depth (inches):	
Water Table Present?	Yes No		
Saturation Present?		Depth (inches):	Wetland Hydrology Present? Yes No_X_
(includes capillary fringe)		photos, previous inspections), if availab	
Remarks: No wetland hydrology indicators p	present		



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

US Army Corps of Engineers

Hydrophytic vegetation not present due to dominance test of 0% and prevalance index

SOIL Sampling Point: OP-WE-UP

Profile Desc	ription: (Des	cribe to the	depth ne	eeded to document	the ind	icator or	confirm	the absence of Indicators	s.)
Depth		Matrix				Features			
(inches)	Colo	r (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 2	10YR	2/2	100					SAND	Organics
2 to 16	10YR	5/3	100					SAND	
16 to 20	10YR	3/1	100					SAND	
¹Type: C=Co	ncentration, [D=Depletion,	RM=Red	luced Martix, CS=Co	overed or	r Coated	Sand Gra	ains. ² Location: PL=P	ore Lining, M=Matrix.
Black Hist Hydrogen Stratified I Organic B 5 cm Mucl Muck Pres 1 cm Mucl Depleted I Thick Darl Coast Pra Sandy Mu	A1) pedon (A2) pic (A3) Sulfide (A4) Layers (A5) odies (A6) (LRF ky Mineral (A7) sence (A8) (LRR P, k (A9) (LRR P, Below Dark Sur k Surface (A12) pirie Redox (A16 peyed Matrix (S4)	(LRR P, T, U) R U) T) face (A11)) (MLRA 150A) (LRR O, S))	Polyvalue Below S Thin Dark Surface Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfa Depleted Dark Su Redox Depression Marl (F10) (LRR L Depleted Ochric (I Iron-Manganese M Umbric Surface (F Delta Ochric (F17) Reduced Vertic (F	(E) (S9) (LR (F1) (LR (F2) (F3) (CF6) (F6) (F7) (F8) (J) (MLF (F7) (MLF (F7) (MLF (F7) (MLF (F7) (MLF (F7) (MLF (MLF (F7) (MLF (MLF (MLF (MLF (MLF (MLF (MLF (MLF	R S, T, U) (LRR O) RA 151) 12) (LRR C) P, T, U) (51)), P, T)	1 cm Muck (A9) (LF 2 cm Muck (A10) (LF Reduced Vertic (F1 Piedmont Floodplai Anomalous Bright L (MLRA 153B) Red Parent Materia Very Shallow Dark Other (Explain in Re	LRR S) 8) (outside MLRA 150A,B) In Soils (F19) (LRR P, S, T) Loamy Soils (F20) Il (TF2) Surface (TF12) (LRR T, U) emarks) Irrophytic vegetation and wetland be present,
Stripped N	Matrix (S6)			Piedmont Floodpla					
Dark Surfa	ace (S7) (LRR F	P, S, T, U)		Anomalous Bright	•		•	9A, 153C, 153D)	
Type: Depth (inc. Remarks: No hydric soils	ches):	if observed	-					Hydric Soil Present?	Yes No _X

Project/Site: Orsted	City/County:	Ocean County Sampling Date: 6/27/2019
Applicant/Owner: Ocean Wind - Farm Property		State: NJ Sampling Point: OP-WE-WET
Investigators: Steve Seymour	James Eberhardt	Section, Township, Range S T Lacey R
Landform (hillslope, terrace, etc.): Depressi	on Local Relief (concave, convex, none): None Slope(%) 0-2%
Subregion (LRRor MLRA): LRR T	Lat: 39.811366	Long: -74.185059 Datum: Decimal Degrees
Soil Map Unit Name: Atsion sand		NWI Classification: E2EM5P
Are climatic / hydrologic conditions on the site typical	Il for this time of year? Yes X	No (If No, explain in Remarks)
Are Vegetation, Soil, Hydrology	, significantly disturbed?	Are "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, Hydrology	_, naturally problematic?	(If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach a sit	e map showing sampling po	int locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X	No	
	No Is the Sampled Area within a Wetland?	
Wetland Hydrology Present? Yes X	No within a wetland?	Yes X No
Remarks:		
Site hydrology affected by extensive/historical ditch	ing. Pit located in WLE.	
HANDROI OCA		
HYDROLOGY		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; che	eck all that apply)	Surface Soil Cracks (B6)
✓ Surface Water (A1)		Sparsely Vegetated Concave Surface (B8)
✓ High Water Table (A2)	Aquatic Fauna (B13) Marl Deposits (B15) (LRR U)	Drainage Patterns (B10)
Saturation (A3)	✓ Hydrogen Sulfide Odor (C1)	Moss Trim Lines (B16)
Water Marks (B1)	Oxidized Rhizospheres along Living R	Roots (C3) Dry-Season Water Table (C2)
Sediment Deposits (B2)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Drift Deposits (B3)	Recent Iron Reduction in Tilled Soils (
Algal Mat or Crust (B4)	☐ Thin Muck Surface (C7)	Geomorphic Position (D2)
Iron Deposits (B5)	Other (Explain in Remarks)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)		FAC-Neutral Test (D5)
Water-Stained Leaves (B9)		✓ Sphagnum moss (D8) (LRR T,U)
<u>Field Observations:</u>		
Surface Water Present? Yes X No	Depth (inches): 2	
Water Table Present? Yes X No	Depth (inches): 0	Wetland Hydrology Present? Yes X No
Saturation Present? Yes X No (includes capillary fringe)	Depth (inches): 0	
Describe Recorded Data (stream gauge, monitoring well, ae	rial photos, previous inspections), if available	e:
Standing water in old ditch 0.5-6" deep, no discerable flow.		
P		
Remarks:		



EGETATION_ \	Use scientific names of plants.				Sam	pling Point	: OP-V	WE-WET	<u> </u>
		Absolute % Cover	Dominant Species	Indicator Status	Dominance Test V	Vorksheet:			
Tree Stratum	(Plot size: 30 Ft)				Number of Domina That Are OBL, FA			2	(A)
Acer rubrum		50	Υ	FAC	That AIC OBE, I A	OW, OF TA	<i></i>		_ ` ′
		50	=Total Cover		Total Number of Do Species Across all			2	(B)
Shrub Stratum					Opecies Across an	Otrata.			- (D)
Herb Stratum	(Plot size: <u>6 Ft</u>)				Percent of Dominar That Are OBL, FAC		<u>.</u>	100.0%	(A/B)
Phragmites aust	tralis	50	Υ	FACW					
Lemna sp.			N	OBL	Prevalence Index				
		60	=Total Cover		Total % Cover	of: 10	$\frac{Multipoonup}{x 1 = 0}$	ply by: 10	
Vine Stratum					OBL species			100	
					FACW species	50	_ x 2 =		
					FAC species	50	_ x 3 =_	150	
					FACU species	0	_ x 4 =_	0	
					UPL species	0	_ x 5 =_	0	
					Column Totals:	110	_(A)	260	(B)
					Prevalence Ir	ndex = B/A	=	2.36	
					Hydrophytic Vegeta	ation Indic	ators:		
					1 - Rapid Test	for Hydropl	nytic Ve	getation	
					X 2 - Dominance	Test > 50%	6		
					X 3 - Prevalence	Index ≤ 3.0)		
					Problematic Hy	drophytic \	/egetation	on (Exp	olain)
					Indicators of hydric so be present, unless dis				
					Definitions of Veget	tation Stra	ta:		
					Tree – Woody plants				
					approximately 20 ft (6 (7.6 cm) or larger in (6 m) or mo diameter at	re in hei breast l	ght and : height (E	3 in.)BH).
					Sapling – Woody pla	nts exclud	ina woo	dv vines	
					approximately 20 ft (6 than 3 in. (7.6 cm) DI	6 m) or mo			
					Shrub – Woody plant approximately 3 to 20				
					Herb – All herbaceou herbaceous vines, re plants, except woody 3 ft (1 m) in height.	gardless of	size. In	ıcludes v	voody
					Woody vine – All woo	ody vines, r	egardle	ss of hei	ght.
					Hydrophytic Vegetation Prese	nt? Yes	X	No	

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

Hydrophytic vegetation present based on dominance test and prevalence test

SOIL Sampling Point: OP-WE-WET

D	epth	l	Cole	Matrix or (moist)	%	Color (moist)		eatures Type 1			exture	Remarks
			10YR	5 / 4				1,00		SAND	<u> </u>	peat, plant fibers
6		10	10YR	4/1	100					SAND		peat, plant libers
10		20	10YR	3/1	100					SAND		
												 -
			centration, ndicators:	D=Depletion,	RM=Red	uced Martix, CS=Co	overed or	Coated	Sand Gra			re Lining, M=Matrix.
	Hist Blace Hyde Strae Org 5 cr Muc 1 cr Dep Thic Coa	ck Histic rogen S atified La anic Boo n Mucky ck Prese n Muck oleted Boo ck Dark	idion (A2) (A3) ulfide (A4) uyers (A5) dies (A6) (LR idineral (A7) ince (A8) (LFR P, ellow Dark Su Surface (A12 e Redox (A1)	(LRR P, T, U) RR U) T) Inface (A11))	Polyvalue Below S Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Ma Depleted Matrix (I Redox Dark Surfa Depleted Dark Surfa Redox Depressio Marl (F10) (LRR I Depleted Ochric (I Iron-Manganese I Umbric Surface (I	e (S9) (LRI neral (F1) (ttrix (F2) F3) nce (F6) rface (F7) ns (F8) J) F11) (MLF	R S, T, U) LRR O) RA 151)		1 c 2 c Re Pie An (M Re Ve Ott	cm Muck (A9) (LRF cm Muck (A10) (LR educed Vertic (F18) edmont Floodplain iomalous Bright Loi LRA 153B) ed Parent Material (ery Shallow Dark Su ther (Explain in Ren	R S) (outside MLRA 150A,B) Soils (F19) (LRR P, S, T) amy Soils (F20) TF2) urface (TF12) (LRR T, U) narks) phytic vegetation and wetland present,
	Sar Strip Dar	oped Mak Surface	e (S7) (LRR		:(Ł	Delta Ochric (F17 Reduced Vertic (F Piedmont Floodpl Anomalous Bright	- - - - 	A 150A, 15 F19) (MLR	A 149A)	A, 153C, 153D))	
		e: <u>silt</u>		2.00						Hydric S	oil Present?	Yes X No
_	Dep arks:	oth (inch	es): <u>1</u>	0-20								
			nic deposits	in bends of the	ditches. No	discerable flow; water	appears s	stagnant. G	àravel in sa	and layer consis	sts of glacially roun	ded quartz; 20% of layer.

Project/Site: Orste	d		City/County:	Ocean County Sampling Date: 5/5/2020
Applicant/Owner:	Ocean Wind - Holtec Prope	rty		State: NJ Sampling Point: WL-A-UPL
Investigators: Step	ohen Seymour	Jaclyn Chapn	nan	Section, Township, Range S T Lacey R
Landform (hillslope, ter	race, etc.): Level		Local Relief (c	concave, convex, none): None Slope(%) 0
Subregion (LRRor MLF	RA): LRR T	Lat: 39.81	0717	Long: -74.199280 Datum: WGS 1984
Soil Map Unit Name:	Psamments, 0-2% slope	<u> </u>		NWI Classification: Not mapped
·	c conditions on the site typi		of year? Yes X	No (If No, explain in Remarks)
				- `
	, Soil, Hydrology			Are "Normal Circumstances" present? Yes X No
Are Vegetation	, Soil, Hydrology	, naturally pr	oblematic?	(If needed, explain any answers in Remarks.)
SUMMARY OF F	INDINGS - Attach a s	ite map sho	wing sampling poi	nt locations, transects, important features, etc.
Hydrophytic Vegetation	on Present? Yes	No X		
Hydric Soil Present?	Yes	No X	Is the Sampled Area	1
Wetland Hydrology P		No X	within a Wetland?	Yes No X
Remarks:				
HYDROLOGY				
Wetland Hydrology I	ndicators:			Secondary Indicators (minimum of two required)
Primary Indicators (mi	nimum of one is required; of	check all that app	oly)	Surface Soil Cracks (B6)
Surface Water (A1)		Aquatic Fa	auna (B13)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2	.)		osits (B15) (LRR U)	Drainage Patterns (B10)
Saturation (A3)		Hydrogen	Sulfide Odor (C1)	Moss Trim Lines (B16)
Water Marks (B1)		Oxidized F	Rhizospheres along Living Re	
Sediment Deposits (B	2)	Presence	of Reduced Iron (C4)	Crayfish Burrows (C8)
Drift Deposits (B3)		Recent Iro	n Reduction in Tilled Soils (
Algal Mat or Crust (B4	+)	Thin Muck	Surface (C7)	Geomorphic Position (D2)
Iron Deposits (B5)	(57)	Other (Ex	olain in Remarks)	Shallow Aquitard (D3)
Inundation Visible on	9 , , ,			FAC-Neutral Test (D5)
Water-Stained Leaves	s (B9)			Sphagnum moss (D8) (LRR T,U)
Field Observations:				
Surface Water Present?			h (inches):	
Water Table Present?	Yes No		h (inches):	Wetland Hydrology Present? YesNo_X_
Saturation Present?	Yes No	X Dept	h (inches):	Welland Hydrology Fresent: 163 NO_X
(includes capillary fringe Describe Recorded Data (s	e) stream gauge, monitoring well, a	aerial photos, previ	ous inspections), if available	 ::
•				
Remarks:				
No wetland hydrology pres	ent.			



/EGETATION_ 0	se scientific names of plants.	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksho		UPL	
Tree Stratum Juniperus virginia	(Plot size: <u>30 Ft</u>)	20	Y	FACU	Number of Dominant Spec That Are OBL, FACW, or		2	(A)
Pinus sylvestris		20	Y =Total Cover	NI	Total Number of Dominant Species Across all Strata:		5	(B)
Shrub Stratum	(Plot size: <u>30 Ft</u>)				Percent of Dominant Speci That Are OBL, FACW, or F		0.0%	(A/B)
Juniperus virginia Myrica pensylvan			Y	FACU FAC	Prevalence Index Worksh			
- Wiynoa pensyivan		35		-				
Harb Stratum	(5)		=Total Cover		Total % Cover of:	$\frac{\text{Multipl}}{\text{x 1 =}}$	y by: 0	
Herb Stratum	(Plot size: <u>6 Ft</u>)	20	V	EA CVA/	OBL species	x 2 =	60	
Panicum dichotor Fragaria virginian			Y	FACU	FACW species 30			
Fragalia Vilgililali	d	50			FAC species 15	x 3 =	45	
Via - Chartura			=Total Cover		FACU species 60	x 4 =	240	
Vine Stratum					UPL species 0	x 5 =	0	
					Column Totals: 105	(A)	345	(B)
					Prevalence Index = E	3/A= 3	3.29	
					Hydrophytic Vegetation In	dicators:		
					1 - Rapid Test for Hydr	ophytic Vege	etation	
					2 - Dominance Test >	50%		
					3 - Prevalence Index ≤	3.0		
					Problematic Hydrophyt	tic Vegetation	n (Exp	plain)
					Indicators of hydric soil and we be present, unless disturbed o		y must	
					Definitions of Vegetation S	trata:		
					Tree – Woody plants, exclud approximately 20 ft (6 m) or (7.6 cm) or larger in diamete	more in heigl	nt and	
					Sapling – Woody plants, excapproximately 20 ft (6 m) or than 3 in. (7.6 cm) DBH.			
					Shrub – Woody plants, excluapproximately 3 to 20 ft (1 to	iding woody 6 m) in heig	vines, ht.	
					Herb – All herbaceous (non- herbaceous vines, regardles plants, except woody vines, 3 ft (1 m) in height.	s of size. Inc	ludes v	woody
					Woody vine – All woody vine	es, regardless	s of he	ight.
					Hydrophytic Vegetation Present?	/es!	No	X_

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

Hydrophytic vegetation not dominant and prevlance test greater than 3

SOIL Sampling Point: WL-A-UPL

	ription: (Des	Matrix	e depth ne	eded to document		eatures	contirm	the absence of Indicators.)	
Depth (inches)	Colo	(moist)	%	Color (moist)	%	Type 1	Loc ²	Texture	Remarks
0 to 6	10YR	3/2	100					ORGANIC/SANDY LOAM	
6 to 20	10YR	5/6	100					SANDY SILT	40% rounded pebbles
¹Type: C=Cor	ncentration, [D=Depletion	, RM=Red	uced Martix, CS=Co	vered or	Coated	Sand Gra	nins. ² Location: PL=Pore Lin	ing, M=Matrix.
Hydric Soil I Histosol (A Histic Epip Black Histi Hydrogen S Stratified L Organic Bo 5 cm Muck Muck Press 1 cm Muck Depleted B Thick Dark Coast Praii Sandy Muck	ndicators: 1) edon (A2) c (A3) Sulfide (A4)	R P, T, U) (LRR P, T, U) R U) T) face (A11) -) (MLRA 150 <i>A</i>		Polyvalue Below S Thin Dark Surface Loamy Mucky Mini Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surface Depleted Dark Surface Redox Depression Marl (F10) (LRR U Depleted Ochric (F Iron-Manganese M Umbric Surface (F	Surface (S (S9) (LRI eral (F1) (trix (F2) (3) ce (F6) fface (F7) as (F8) () () ffasses (F1) ()	8) (LRR S, R S, T, U) LRR O) RA 151) 12) (LRR C	T, U)	Indicators for Problematic 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outs Piedmont Floodplain Soils Anomalous Bright Loamy S (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface Other (Explain in Remarks) Indicators of hydrophytic hydrology must be prese unless disturbed or prob	e Hydric Soils: 3 side MLRA 150A,B) (F19) (LRR P, S, T) Soils (F20) (TF12) (LRR T, U) c vegetation and wetland ent,
	atrix (S6) ce (S7) (LRR I		d):	Reduced Vertic (F Piedmont Floodpla Anomalous Bright	ain Soils (F19) (MLR.	A 149A)	A, 153C, 153D) Hydric Soil Present?	Yes No X
Remarks:		heast of wetla	nd pit. Hydri	ic soils not present.					

Project/Site: Orsted	City/County:	Ocean County Sampling Date: 5/5/2020
Applicant/Owner: Ocean Wind - Holtec Property		State: NJ Sampling Point: WL-A-WET
Investigators: Stephen Seymour Jaclyn Cha	apman	Section, Township, Range S T Lacey R New J
Landform (hillslope, terrace, etc.):	Local Relief (d	concave, convex, none): Concave Slope(%) 0
Subregion (LRRor MLRA): LRR T Lat: 39.	.810717	Long: -74.199280 Datum: WGS 1984
Soil Map Unit Name: Psamments 0-2% slopes		NWI Classification: Not mapped
Are climatic / hydrologic conditions on the site typical for this tir	me of year? Yes X	No (If No, explain in Remarks)
Are Vegetation, Soil, Hydrology, significa	ntly disturbed?	Are "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, Hydrology, naturally		(If needed, explain any answers in Remarks.)
		int locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X No Hydric Soil Present? Yes X No Wetland Hydrology Present? Yes X No Remarks: Depressional wetland dominated by fall panicum.	Is the Sampled Area within a Wetland?	Yes X No
HYDROLOGY Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that	apply)	Surface Soil Cracks (B6)
Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9)	Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (C2) Crayfish Burrows (C8)	
Field Observations:		
Water Table Present? Yes X No D	epth (inches): 1 epth (inches): To Surfa epth (inches): To Surfa	Wetland Hydrology Present? Yes X No
Remarks: Ponding observed. Wetland hydrology present.		



(Plot size: 30 Ft

(Plot size: 30 Ft

(Plot size: 6 Ft

Tree Stratum

Shrub Stratum

Herb Stratum

Vine Stratum

Acer rubrum

Juniperus virginiana

Myrica pensylvanica

Panicum dichotomiflorum

<u>Absolute</u>

% Cover

10

10

20

30

30

90

90

Dominant

Species

Υ

=Total Cover

=Total Cover

Υ

=Total Cover

Indicator

Status

FAC

FACU

FAC

FACW

4

75.0%

(B)

(A/B)

That Are OBL, FACW, or FAC: Prevalence Index Worksheet:

Percent of Dominant Species

Species Across all Strata:

Total % Cover	Multip	Multiply by:					
OBL species	0	x 1 =	0				
FACW species	90	x 2 =	180				
FAC species	40	x 3 =	120				
FACU species	10	x 4 =	40				
UPL species	0	x 5 =	0				
Column Totals:	140	(A)	340	(B)			
Prevalence Index = B/A= 2.43							

Hydrophytic Vegetation Indicators:

- 1 Rapid Test for Hydrophytic Vegetation
- X 2 Dominance Test > 50%
- X 3 Prevalence Index ≤ 3.0

Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes X No

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

Hydrophytic vegetation present based on dominance of species that are OBL, FACW, or FAC greater than 50% and a prevalence index less than or equal to 3.

SOIL Sampling Point: WL-A-WET

	iption: (Des	cribe to the Matrix	depth ne	eded to documen		icator or Features	confirm	the absence of Indicators.)	
Depth (inches)	Color	(moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 8	10YR	4/2	100					FINE SANDY LOAM	
8 to 20	10YR	4/2	80	10YR 4/6	20	С	M	FINE CLAY SAND	20% rounded pebbles
¹Type: C=Con	centration, D)=Depletion,	RM=Redu	ced Martix, CS=C	overed or	Coated S	and Gr	ains. ² Location: PL=Pore Linir	ng, M=Matrix.
5 cm Mucky Muck Prese 1 cm Muck Depleted Be Thick Dark Coast Prair Sandy Mucl Sandy Gley Sandy Rede Stripped Ma	edon (A2) c (A3) Sulfide (A4) ayers (A5) dies (A6) (LRF y Mineral (A7) ence (A8) (LRR p, 1 elow Dark Surf Surface (A12) die Redox (A16 ky Mineral (S1 ded Matrix (S4) ox (S5)	(LRR P, T, U) R U) Γ) face (A11)) (MLRA 150A) (LRR O, S)	[]	Polyvalue Below Thin Dark Surface Loamy Mucky Min Loamy Gleyed Matrix (Redox Dark Surface Depleted Dark Surface Marl (F10) (LRR I Depleted Ochric (Iron-Manganese I Umbric Surface (I Delta Ochric (F17 Reduced Vertic (I Piedmont Floodp Anomalous Brigh	e (S9) (LR neral (F1) (atrix (F2) F3) ace (F6) urface (F7) ns (F8) U) (F11) (MLF Masses (F F13) (LRR 7) (MLRA 1 F18) (MLR	R S, T, U) (LRR O) 12) (LRR O P, T, U) 51) A 150A, 15 F19) (MLRA	P, T) DB)	Indicators for Problematic 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outsid Piedmont Floodplain Soils (F Anomalous Bright Loamy So (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (Other (Explain in Remarks) Indicators of hydrophytic whydrology must be presen unless disturbed or problemarks)	le MLRA 150A,B) F19) (LRR P, S, T) ills (F20) TF12) (LRR T, U) vegetation and wetland t,
Type: Cland Depth (inch	ay es): <u>9</u>			ne depleted matrix (F	3) indicato	r		Hydric Soil Present?	Yes X No

Project/Site: (Orsted			City/County:	Ocean County	Sampling Date	e: 5/5/2020		
Applicant/Owner:	Ocean Wind -	Holtec Property			State: N	IJ Sampling Point	t: WL-B-UPL		
Investigators:	Stephen Seymour		Jaclyn Chap	man	Section, Township,	Range S T La	acey R		
Landform (hillslop	e, terrace, etc.):	Hillslope		Local Relief (c	concave, convex, nor	ne): Concave	Slope(%) 10		
Subregion (LRRo	r MLRA): LRR T		Lat: 39.81	10893	Long: -74.200239	Date	um: WGS 1984		
Soil Map Unit Nar	ne: Psamment	s, 0-2% slopes			NWIC	classification: Not map	pped		
•	rologic conditions o		for this time	of year? Yes X		No, explain in Remarks	•		
_	, Soil, I				`	stances" present? Y	•		
_		-	-						
Are vegetation	, Soil, I	nydrology	, naturally p	robiematic?	(If needed, explain	n any answers in Rema	ırks.)		
SUMMARY C	OF FINDINGS -	Attach a site	map sho	wing sampling poi	nt locations, tra	<u>ansects, importar</u>	nt features, etc.		
Hydrophytic Veg	getation Present?	Yes N	No X						
Hydric Soil Pres		Yes N	No X	Is the Sampled Area	l				
Wetland Hydrolo	ogy Present?		No X	within a Wetland?	Ye	es No	X		
Remarks:									
HYDROLOGY									
Wetland Hydrol	ogy Indicators:				Secor	ndary Indicators (minim	num of two required)		
•	rs (minimum of one	is required; che	ck all that ap	oply)		Surface Soil Cracks (B6)			
Surface Water ((A1)		Aquatic E	auna (B13)		Sparsely Vegetated Conce	ave Surface (B8)		
High Water Tab	` ,		_	osits (B15) (LRR U)	Drainage Patterns (B10)				
☐ Saturation (A3)				Sulfide Odor (C1)		Moss Trim Lines (B16)			
☐ Water Marks (B	1)		_ , ,	Rhizospheres along Living Ro	oots (C3)	Dry-Season Water Table	(C2)		
Sediment Depo	sits (B2)			of Reduced Iron (C4)		Crayfish Burrows (C8)			
Drift Deposits (E	33)			on Reduction in Tilled Soils (0	26)	Saturation Visible on Aeria	al Imag.(C9)		
Algal Mat or Cru			☐ Thin Muc	k Surface (C7)	,	Geomorphic Position (D2))		
Iron Deposits (E	35)		Other (Ex	rplain in Remarks)		Shallow Aquitard (D3)			
	ole on Aerial Imagery (B7)				FAC-Neutral Test (D5)			
Water-Stained I	Leaves (B9)					Sphagnum moss (D8) (LR	₹R T,U)		
Field Observatio	ons:								
Surface Water Pr	esent? Ye	es No	X Dep	th (inches):					
Water Table Pres	sent? Ye	es No	X Dep	th (inches):		bb	V N- V		
Saturation Preser		es No	X Dep	th (inches):	wetiand H	lydrology Present?	Yes No_X_		
(includes capillary Describe Recorded I	<u> </u>	onitoring well aeri:	al nhotos nrev	vious inspections), if available	<u> </u>				
Docombo (Nocordou I	zata (stroam gaago, n	ionitoring won, done	агриосо, рго	nodo mopositono), n available					
Remarks:									
No wetland hydrolog	y present.								



VEGETATION_	Use scientific names of p	olants.			San	npling Poin	t: VVL-t	5-UPL	
		<u>Absolute</u> <u>% Cover</u>		Indicator Status	Dominance Test V	Vorksheet	:		
Tree Stratum Pinus resinosa	(Plot size: <u>30 Ft</u>)	30	Y	FACU	Number of Domina That Are OBL, FA			2	(A)
Prunus virginia				FACU	Total Number of Do	ominant			
Pinus sylvestri				NI	Species Across all			7	(B)
		60	=Total Cover		Derecat of Demine	nt Cnasica			
Shrub Stratum	(Plot size: 30 Ft)				Percent of Domina That Are OBL, FAC			28.6%	(A/B)
Prunus virginia	,	25	Υ	FACU	Prevalence Index	Workshee	et:		
		25	=Total Cover		Total % Cover	of:	Multi	ply by:	
Herb Stratum	(Plot size: 6 Ft)				OBL species	0	x 1 =	0	
Acer rubrum		30	Y	FAC	FACW species	10	x 2 =	20	
Juniperus virgi	niana	10	Y	FACU	FAC species	30	x 3 =	90	
Thuja occident	alis	10		FACW	FACU species	95	x 4 =	380	
		50	=Total Cover		UPL species	0	x 5 =	0	
Vine Stratum Celastrus orbio	(Plot size: <u>30 Ft</u>)	10	Υ	FACU	Column Totals:	135	(A)	490	(B)
		10	=Total Cover		Prevalence li	ndex = B/A	=	3.63	
					Hydrophytic Veget	ation Indi	cators:		
					1 - Rapid Test			getation	
					2 - Dominance	, .	•	5	
					3 - Prevalence	Index < 3	Ω		
								-	
					Problematic Hy	ydrophytic	Vegetati	on (Exp	olain)
					Indicators of hydric so be present, unless di				
					Definitions of Vege	tation Stra	ata:		
					Tree – Woody plants approximately 20 ft ((7.6 cm) or larger in	6 m) or mo	re in hei	ght and	
					Sapling – Woody pla approximately 20 ft (than 3 in. (7.6 cm) D	6 m) or mo			
					Shrub – Woody plan approximately 3 to 2				
					Herb – All herbaceou herbaceous vines, re plants, except woody 3 ft (1 m) in height.	egardless o	of size. In	cludes v	voody
					Woody vine – All wo	ody vines,	regardle	ss of he	ight.
Pomarke: (Include ph	oto numbers here or on a sepa	urate sheet \			Hydrophytic Vegetation Prese	nt? Ye	S	No	<u>x</u>

Hydrophytic vegetation not dominant based on less than 50% of species that are OBL, FACW, or FAC and prevalence index greater than 3

SOIL Sampling Point: WL-B-UPL

			ription: (De	Matrix	aeptn ne	eeded to document		icator or Features	contirm	the absence of indicators.)		
	epth nche		Colo	or (moist)	%	Color (moist)	%	Type ¹	Loc 2	Texture	Remarks	
0			10YR	3/2	100			-71-		FINE SANDY LOAM		
8	to		10YR	5/3	100					FINE CLAY LOAM		
18		20	10YR	2/1	100					GRANULAR BLACK	Granular coal re	esidue
						uced Martix, CS=Co	vered or	Coated	Sand Gra	ins. ² Location: PL=Pore Linir	ng, M=Matrix.	
Ну	dric	c Soil	Indicators:			Polyvalue Below S	Surface (S	9) /I DD C	T II)	Indicators for Problematic I	Hydric Soils: 3	
		tosol (A	•			Thin Dark Surface			1,0)	1 cm Muck (A9) (LRR O)		
H			edon (A2)			Loamy Mucky Min	eral (F1) (LRR O)		2 cm Muck (A10) (LRR S)		
		ıck Histi	. ,			Loamy Gleyed Ma	trix (F2)			Reduced Vertic (F18) (outsid	le MLRA 150A,B)	
H			Sulfide (A4)			Depleted Matrix (F				☐ Piedmont Floodplain Soils (F	19) (LRR P, S, T)	
			ayers (A5) odies (A6) (LR	R P, T, U)		Redox Dark Surface	•			Anomalous Bright Loamy So (MLRA 153B)	ils (F20)	
) (LRR P, T, U)		Depleted Dark Sui	face (F7)			Red Parent Material (TF2)		
	Mu	ck Pres	ence (A8) (LR	RU)		Redox Depression	ıs (F8)			Very Shallow Dark Surface (TF12) (LRR T, U)	
	1 c	m Muck	(A9) (LRR P,	T)		Marl (F10) (LRR U	J)			Other (Explain in Remarks)		
Ц		•	Below Dark Su	, ,		Depleted Ochric (F	- -11) (MLR	RA 151)		³ Indicators of hydrophytic v	regetation and wetlar	nd
			Surface (A12	•		Iron-Manganese M	lasses (F⁴	12) (LRR C), P. T)	hydrology must be presen	nt,	iu
			•	6) (MLRA 150A) 1) (LRR O, S))	Umbric Surface (F	•		, , ,	unless disturbed or proble	matic.	
Н		-	yed Matrix (S4			Delta Ochric (F17)		•				
П		-	lox (S5)	·)		Reduced Vertic (F	•		50B)			
		-	atrix (S6)			Piedmont Floodpla			•			
	Daı	rk Surfa	ce (S7) (LRR	P, S, T, U)		Anomalous Bright	•		•	A 153C 153D)		
	1							5110 (1 20) (1, 1000, 1002)		
Ш	Re	estric	ive Layer	(if observed	d):							
	Тур									Hydric Soil Present?	Yes No	X
_		pth (inc	nes):							.,		
	ıarks ıyer c		esidue (black,	granular) enco	ıntered at	18-20" below ground su	rface. No	hydric soil	s present d	ue to not meeting any indicator criteria.		

Project/Site: Orsted		City/County:	Ocean County	Sar	mpling Date:	8/10/2020
Applicant/Owner: Ocean Wi	nd - Holtect Property		State:	NJ Sam	npling Point:	WL-B-WET2
Investigators: Zak Lehmann	ı Jaclyn	Chapman	Section, Towns	ship, Range S	T Lac	ey R
Landform (hillslope, terrace, etc.): Level	Local Relief	f (concave, convex	k, none): Conca	ave	Slope(%) 0
Subregion (LRRor MLRA): LRI	RT Lat:	39.810737	Long: -74.200	0351	Datun	n: WGS 1984
Soil Map Unit Name: Psamn	ments, 0-2% slopes		N\	WI Classification	ı: None	
Are climatic / hydrologic conditio	ns on the site typical for this	s time of year? Yes X	(No	(If No, explain	in Remarks)	
Are Vegetation, Soil	, Hydrology, signif	icantly disturbed?	Are "Normal Cir	rcumstances" pr	esent? Ye	s X No
Are Vegetation, Soil	, Hydrology, natur	ally problematic?	(If needed ex	plain any answe	rs in Remark	
SUMMARY OF FINDING	S - Attach a site map	showing sampling p	,			,
Hydrophytic Vegetation Preser	nt? Yes X No					
Hydric Soil Present?	Yes X No	Is the Sampled Ar				
Wetland Hydrology Present?	Yes X No	within a Wetland?	ſ	Yes X	No	
HYDROLOGY				\	(m.in.in	
Wetland Hydrology Indicators Primary Indicators (minimum of		nat apply)		Surface Soil	,	m of two required)
✓ Surface Water (A1) ✓ High Water Table (A2) ✓ Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Image Water-Stained Leaves (B9)	Ma Hyo Oxi Pre	uatic Fauna (B13) Irl Deposits (B15) (LRR U) drogen Sulfide Odor (C1) dized Rhizospheres along Living esence of Reduced Iron (C4) cent Iron Reduction in Tilled Soils in Muck Surface (C7) ner (Explain in Remarks)		Sparsely Veg Drainage Pat Moss Trim Li Dry-Season V Crayfish Burr Saturation Vi Geomorphic Shallow Aqui FAC-Neutral	getated Concav tterns (B10) ines (B16) Water Table (C rows (C8) sible on Aerial Position (D2) itard (D3)	(2) Imag.(C9)
Field Observations:						
Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (stream gau	Yes X No Yes X No Yes X No Ge, monitoring well, aerial photo	Depth (inches): 2 Depth (inches): To sur Depth (inches): To sur s, previous inspections), if availal	rface Wetla	nd Hydrology P	resent?	Yes _X_ No
Remarks: Wetland hydrology present						



Tree Stratum				Number of Domin That Are OBL, FA			1	(A)
Shrub Stratum								
Herb Stratum (Plot size: _6 Ft)				Total Number of D Species Across all			1	(B)
Phragmites australis	100	Υ	FACW	·		_	•	_ (_)
	100	=Total Cover		Percent of Domina That Are OBL, FA			100.0%	(A/B
Vine Stratum				Prevalence Index	Workshee	et:		
				Total % Cover	of:	Mul	tiply by:	
				OBL species	0	x 1 =	0	
				FACW species	100	x 2 =	200	
				FAC species	0	x 3 =	0	
				FACU species	0	x 4 =	0	
				UPL species	0	x 5 =	0	
				Column Totals:	100	(A)	200	(B)
				Prevalence I	ndex = B/A	\=	2.00	
				Hydrophytic Vege	tation Indi	cators:		
				1 - Rapid Test	for Hydrop	hytic V	egetation	
				X 2 - Dominance	e Test > 50	%		
				X 3 - Prevalence	e Index ≤ 3.	0		
				Problematic H	ydrophytic	Vegeta	tion (Ex	plain)
				Indicators of hydric s be present, unless d				
				Definitions of Vege	tation Stra	ata:		
				Tree – Woody plants approximately 20 ft (7.6 cm) or larger in	(6 m) or mo	ore in he	eight and	3 in. DBH).
				Sapling – Woody pla approximately 20 ft (than 3 in. (7.6 cm) D	(6 m) or mo	ding woo	ody vines eight and	i, less
				Shrub – Woody plar approximately 3 to 2				
				Herb – All herbaceo herbaceous vines, re plants, except wood 3 ft (1 m) in height.	egardless o	of size. I	ncludes	woody
				Woody vine – All wo	ody vines,	regardl	ess of he	ight.
				Hydrophytic Vegetation Prese	ent? Ye	s X	No	
Remarks: (Include photo numbers here or on a separate sheet.)								

% Cover

Species

<u>Status</u>

SOIL Sampling Point: WL-B-WET2

Profile Desc	ription: (Des	cribe to the	depth n	eeded to documen	t the inc	licator or	confirm	the absence of Indicators.)	
Depth		Matrix				Features			
(inches)	Colo	r (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 4	10YR	2/1	100		70	CS	М	SANDY CLAY	Fibrous black muck; 70% particles masked with organic
4 to 20	10YR	5 / 2	100		70	CS	M	SANDY CLAY	70% particles masked with organic
¹Type: C=Co	ncentration, [D=Depletion,	RM=Red	duced Martix, CS=Co	overed o	r Coated	Sand Gra	ains. ² Location: PL=Pore Lini	ng, M=Matrix.
Black His Hydrogen Stratified Organic E 5 cm Muc Muck Pre 1 cm Muc Depleted Thick Dar	pedon (A2)	(LRR P, T, U) R U) T) face (A11))	Polyvalue Below S Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Ma Depleted Matrix (f Redox Dark Surfa Depleted Dark Su Redox Depression Marl (F10) (LRR U Depleted Ochric (Iron-Manganese N	e (S9) (LF heral (F1) htrix (F2) 	RR S, T, U) (LRR O)) RA 151)		Indicators for Problematic 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outsic Piedmont Floodplain Soils (I Anomalous Bright Loamy So (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (Other (Explain in Remarks) Indicators of hydrophytic hydrology must be presei unless disturbed or proble	de MLRA 150A,B) F19) (LRR P, S, T) pils (F20) (TF12) (LRR T, U) vegetation and wetland
Sandy Mu Sandy Gl Sandy Re Stripped I Dark Surf	acky Mineral (S1 eyed Matrix (S4) dox (S5) Matrix (S6) ace (S7) (LRR F) (LRR O, S)) P, S, T, U)		Umbric Surface (F Delta Ochric (F17 Reduced Vertic (F Piedmont Floodpl Anomalous Bright) (MLRA 18) (MLF ain Soils	151) RA 150A, 19 (F19) (MLR	A 149A)		Yes X No
Remarks:	dicators present								

	City/County: Ocean	County Sampling Date: 8/10/2020
Holtec Property		State: NJ Sampling Point: WL-C-UP
Jaclyn Cha	pman Sectio	n, Township, Range S T Lacey R
Level	Local Relief (concave	e, convex, none): None Slope(%) 0
Lat: 39.	810631 Long:	-74.201509 Datum: WGS 1984
s, 0-2% slopes		NWI Classification: Not mapped
on the site typical for this tir	ne of year? Yes X No	(If No, explain in Remarks)
Hydrology, significa	ntly disturbed? Are "No	ormal Circumstances" present? Yes X No
	n na hi a na ati a O	· · · · · · · · · · · · · · · · · · ·
	(11 110)	eded, explain any answers in Remarks.) eations, transects, important features, etc.
Yes No X		
	Is the Sampled Area	
	within a Wetland?	Yes No X
103100 _X		
or nydiophydio vegetation,	solis, and wettand hydrology	
is required; check all that	apply)	Secondary Indicators (minimum of two required) Surface Soil Cracks (B6)
Aquatio	Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
		Drainage Patterns (B10)
		Moss Trim Lines (B16)
Oxidize	d Rhizospheres along Living Roots (C3	
Presen	ce of Reduced Iron (C4)	Crayfish Burrows (C8)
Recent	Iron Reduction in Tilled Soils (C6)	Saturation Visible on Aerial Imag.(C9)
☐ Thin M	uck Surface (C7)	Geomorphic Position (D2)
	Explain in Remarks)	Shallow Aquitard (D3)
В7)		FAC-Neutral Test (D5) Sphagnum moss (D8) (LRR T,U)
		Spriagrium moss (Do) (ERR 1,0)
na Na V D	anth (inches).	
	epth (inches):	
es No X D	epth (inches):	Wetland Hydrology Present? Yes No_X_
es No X D		Wetland Hydrology Present? Yes No_X_
	Level Lat: 39.0 s, 0-2% slopes In the site typical for this time thydrology, significant thydrology, naturally the site map shape	Jaclyn Chapman Section



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

No hydric vegetation dominance

Yes

Χ

No

Hydrophytic **Vegetation Present?** SOIL Sampling Point: WL-C-UP

Depth	iption. (Des	Matrix	аеріп пее	ded to documen		eatures	Commi	the absence of indicators.)	
(inches)	Colo	r (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 20	10YR	5 / 1	60	10YR2/1	40	С	М	SAND	
		D=Depletion,	RM=Reduc	ced Martix, CS=Co	overed or	Coated	Sand Gra		
Hydric Soil I Histosol (A				Polyvalue Below	Surface (S	8) (LRR S,	T, U)	Indicators for Problematic H	<u>lydric Soils:</u> ³
Histic Epipe Black Histie Hydrogen S Stratified Le Organic Bo 5 cm Muck Muck Prese 1 cm Muck Depleted B Thick Dark Coast Prain	edon (A2) c (A3) Sulfide (A4) ayers (A5) idies (A6) (LRF y Mineral (A7) ence (A8) (LRR (A9) (LRR P, elow Dark Sur Surface (A12)	(LRR P, T, U) R U) T) face (A11) b) (MLRA 150A)) (LRR O, S)		Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Ma Depleted Matrix (I Redox Dark Surfa Depleted Dark Su Redox Depression Marl (F10) (LRR U Depleted Ochric (Iron-Manganese N Umbric Surface (F17	neeral (F1) (atrix (F2) F3) ace (F6) urface (F7) ns (F8) J) F11) (MLF Masses (F- F13) (LRR	LRR O) RA 151) 12) (LRR C), P, T)	1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outside Piedmont Floodplain Soils (F1 Anomalous Bright Loamy Soil (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (T Other (Explain in Remarks) 3 Indicators of hydrophytic ve hydrology must be present unless disturbed or probler	19) (LRR P, S, T) Is (F20) F12) (LRR T, U) egetation and wetland
Sandy Red	ox (S5)			Reduced Vertic (F	-18) (MLR	A 150A, 15	60B)		
Stripped M	` '			Piedmont Floodpl	ain Soils (F19) (MLR.	A 149A)		
Dark Surfa	ce (S7) (LRR F	P, S, T, U)		Anomalous Bright	t Loamy So	oils (F20) (MLRA 149	9A, 153C, 153D)	
Restrict Type: Depth (inch		if observed	l): 					Hydric Soil Present?	Yes No X
No hydric soils									

Project/Site: Orsted		City/County: Oce	ean County Sa	ampling Date: 5/5/2020
Applicant/Owner: Ocean Wind - Ho	oltec Property		State: NJ Sa	mpling Point: WL-C-WET
Investigators: Stephen Seymour	Jaclyn Chapr	man Sec	tion, Township, Range S	T Lacey R
Landform (hillslope, terrace, etc.):	Hillslope	Local Relief (conca	ave, convex, none): Cond	cave Slope(%) 5
Subregion (LRRor MLRA): LRR T	Lat: 39.81	0860 Lon	g: -74.200654	Datum: WGS 1984
Soil Map Unit Name: Psamments,	0-2% slope		NWI Classificatio	n: Not mapped
Are climatic / hydrologic conditions on	the site typical for this time	of year? Yes X No	o (If No, explain	ı in Remarks)
Are Vegetation, Soil, Hy	drology, significantly	y disturbed? Are "	'Normal Circumstances" p	present? Yes X No
Are Vegetation, Soil, Hy		blamatia0	needed, explain any answ	
SUMMARY OF FINDINGS - A		(,
Hydrophytic Vegetation Present?	Yes X No			
Hydric Soil Present?	Yes X No	Is the Sampled Area within a Wetland?		
Wetland Hydrology Present?	Yes X No	within a wettand?	Yes X	No
HYDROLOGY				
Wetland Hydrology Indicators:			Secondary Indic	cators (minimum of two required)
Primary Indicators (minimum of one is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	Aquatic For Marl Deport Hydrogen Oxidized I	auna (B13) osits (B15) (LRR U) Sulfide Odor (C1) Rhizospheres along Living Roots (Sparsely Ve	Water Table (C2)
Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9)	Recent Iro Thin Muc	of Reduced Iron (C4) on Reduction in Tilled Soils (C6) k Surface (C7) cplain in Remarks)	Saturation \ Geomorphic Shallow Aqu	Visible on Aerial Imag.(C9) C Position (D2) uitard (D3)
Field Observations:				
Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, more	X No Dept	th (inches): th (inches): Surface th (inches): Surface rious inspections), if available:	Wetland Hydrology	Present? Yes X No
Remarks: Wetland hydrology present				



VEGETATION_ U	se scientific	c names of plants.				Samplin	ig Point:	WL-C-	WET	
			Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worl	ksheet:			
Tree Stratum Acer rubrum	(Plot size:	30 Ft)	60	Y	FAC	Number of Dominant S That Are OBL, FACW			5	(A)
			60	=Total Cover	TAC	Total Number of Domir Species Across all Stra			5	(B)
Shrub Stratum	(Plot size:	30 Ft)								
Clethra alnifolia Acer rubrum				Y	FACW	Percent of Dominant S That Are OBL, FACW,		10	0.0%	(A/B)
			90	=Total Cover		Prevalence Index Wo	rksheet:			
Herb Stratum	(Plot size:	6 Ft)		Total Gover		Total % Cover of:		Multiply	y by:	
Phragmites austr	•	,	40	Υ	FACW	OBL species	0	x 1 =	0	
Onoclea sensibili	S		20	Y	FACW	FACW species	130	x 2 =	260	
			60	=Total Cover		FAC species	80	x 3 =	240	
Vine Stratum	(Plot size:	30 Ft)				FACU species	1 :	x 4 =	4	
Toxicodendron pu	-		1	N	FACU	UPL species	0	x 5 =	0	
			1	=Total Cover		Column Totals:	211 (/	A)	504	(B)
						Prevalence Index	c = B/A=	2	2.39	
						Hydrophytic Vegetatio	n Indicat	ors:		
						1 - Rapid Test for I	-lydrophy ¹	tic Vege	tation	
						X 2 - Dominance Tes		_		
						X 3 - Prevalence Inde	ex < 3 N			
						Problematic Hydro		getation	ı (Exn	olain)
						Indicators of hydric soil an		_	, ,	,
						be present, unless disturb	ed or probl	lematic.		
						Definitions of Vegetation	on Strata:	:		
						Tree – Woody plants, ex approximately 20 ft (6 m) (7.6 cm) or larger in diam) or more	in heigh	nt and 3	
						Sapling – Woody plants, approximately 20 ft (6 m) than 3 in. (7.6 cm) DBH.	or more			
						Shrub – Woody plants, e approximately 3 to 20 ft (
						Herb – All herbaceous (n herbaceous vines, regard plants, except woody vin 3 ft (1 m) in height.	dless of s	ize. Incl	udes v	voody
						Woody vine – All woody	vines, reç	gardless	of hei	ght.
						Hydrophytic Vegetation Present?	Yes _	X N	lo	
emarks: (Include nhot	o numbers hei	re or on a separate sheet)							

Hydrophytic vegetation present based on dominance of species that are OBL, FACW, or FC greater than 50% and a prevalence index less than or equal to 3.

SOIL Sampling Point: WL-C-WET

Profile Desci	ription: (Des		depth ne	eded to document			confirm	the absence of Indicators.)	
Depth		Matrix				eatures			
(inches)	Color	r (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 9	10YR	4 / 1	100					ORGANIC LOAM	Plant roots, 20% sand
9 to 20	10YR	3 / 1	100					SANDY CLAY	Very soft saturated sand with clay
¹Type: C=Cor	ncentration, [D=Depletion,	, RM=Redu	uced Martix, CS=Co	vered or	Coated	Sand Gra	ains. ² Location: PL=Pore Lini	ng, M=Matrix.
Stratified L Organic Bo 5 cm Muck Muck Pres 1 cm Muck Depleted B	edon (A2) c (A3) Sulfide (A4) ayers (A5) odies (A6) (LRF y Mineral (A7) ence (A8) (LRR (A9) (LRR P,	(LRR P, T, U) R U) T) face (A11)	 	Polyvalue Below S Thin Dark Surface Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surface Depleted Dark Surface Redox Depression Marl (F10) (LRR U Depleted Ochric (F	(S9) (LRI eral (F1) (trix (F2) (F3) ce (F6) rface (F7) ns (F8)	R S, T, U) LRR O)	., .,	1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outside Piedmont Floodplain Soils (Figure 1997) Anomalous Bright Loamy Sot (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (Figure 1997) Other (Explain in Remarks) 3 Indicators of hydrophytic	F19) (LRR P, S, T) pils (F20) TF12) (LRR T, U)
Coast Prai Sandy Muc Sandy Gle Sandy Rec Stripped M Dark Surfa	atrix (S6) ce (S7) (LRR F	e) (MLRA 150A) (LRR O, S)) P, S, T, U)	[[[Iron-Manganese M Umbric Surface (F Delta Ochric (F17) Reduced Vertic (F Piedmont Floodpla Anomalous Bright	Masses (F 13) (LRR) (MLRA 1 18) (MLR ain Soils (I	12) (LRR C P, T, U) 51) A 150A, 15 F19) (MLR	0B) A 149A)	hydrology must be preser unless disturbed or proble	nt,
Remarks:	nic material fo	und within the	first 9 in of t	he soil profile. Hydric s	oils prese	nt based o	n soils me	eting criteria for the Histic Epipedon (A2) indicator.
·									

Project/Site: Orsted			City/County:	Ocean County Sampling Date: 8/10/2020
Applicant/Owner: Oce	an Wind - JCP&L	Property		State: NJ Sampling Point: WL-D-UP
Investigators: Zak Lei	nmann	Jacly	n Chapman	Section, Township, Range S T Lacey R
Landform (hillslope, terrac	e, etc.):	_evel	Local Reli	ef (concave, convex, none): None Slope(%) 0
Subregion (LRRor MLRA)	IRR T	Lat	39.810493	Long: -74.200617 Datum: WGS 1984
,			, frequently flooded	NWI Classification: Not mapped
· —		•		
Are climatic / hydrologic c				X No (If No, explain in Remarks)
Are Vegetation, S	oil, Hydrolo	gy, sig	nificantly disturbed?	Are "Normal Circumstances" present? Yes X No
Are Vegetation, Se	oil, Hydrolo	gy, na	urally problematic?	(If needed, explain any answers in Remarks.)
SUMMARY OF FINI	DINGS - Attac	h a site ma	p showing sampling	point locations, transects, important features, etc.
				•
Hydrophytic Vegetation			Is the Sampled	Area
Hydric Soil Present?	Yes	No _	× within a Wetland	
Wetland Hydrology Pres	ent? Yes	No	X	
HYDROLOGY				
Wetland Hydrology Indipersional Primary Indicators (minim		iired; check al	that apply)	Secondary Indicators (minimum of two required) Surface Soil Cracks (B6)
Surface Water (A1)			Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)			Marl Deposits (B15) (LRR U)	☐ Drainage Patterns (B10)
Saturation (A3)			Hydrogen Sulfide Odor (C1)	Moss Trim Lines (B16)
Water Marks (B1)			Oxidized Rhizospheres along Livir	ng Roots (C3)
Sediment Deposits (B2) Drift Deposits (B3)			Presence of Reduced Iron (C4)	Saturation Visible on Aerial Imag (CO)
Algal Mat or Crust (B4)			Recent Iron Reduction in Tilled So	oils (C6) Geomorphic Position (D2)
Iron Deposits (B5)			Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aeri	ial Imagery (B7)		Other (Explain in Remarks)	FAC-Neutral Test (D5)
Water-Stained Leaves (B				Sphagnum moss (D8) (LRR T,U)
				Springfram mose (BS) (E. W. 1,8)
Field Observations: Surface Water Present?	Yes	No. V	Donth (inches):	
Water Table Present?	Yes	NoX NoX	Depth (inches): Depth (inches):	
Saturation Present?	Yes	No X	Depth (inches):	Wetland Hydrology Present? Yes No X
(includes capillary fringe)	. 55			
	am gauge, monitorino	g well, aerial pho	otos, previous inspections), if avai	lable:
Remarks:				
No wetland hydrology present				
Tro Woulding Tryal ology procont				



	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet:
<u>Tree Stratum</u> (Plot size: 30 Ft)			· <u></u>	Number of Dominant Species That Are OBL FACW or FAC: 2 (A)
Juniperus virginiana	20	Υ	FACU	That Are OBL, FACW, or FAC: 2 (A)
	20	=Total Cover		Total Number of Dominant
Shrub Stratum (Plot size: 30 Ft)		_		Species Across all Strata: 5 (B)
Juniperus virginiana	5	Υ	FACU	Percent of Dominant Species 40.0% (A/B)
Myrica pensylvanica	5	Υ	FAC	That Are OBL, FACW, or FAC:
Acer rubrum	1	N	FAC	Prevalence Index Worksheet:
Pinus rigida	1	N	FACU	Total % Cover of: Multiply by:
	12	=Total Cover		OBL species $0 x 1 = 0$
Herb Stratum (Plot size: 6 Ft)				FACW species 70 x 2 = 140
Phragmites australis	60	Υ	FACW	FAC species 7 x 3 = 21
Solidago sempervirens	10	N	FACW	07 × 4 - 400
Polygonum achoreum	1	N	FAC	TACO species
	71	=Total Cover		Of L species
Vine Stratum (Plot size: _30 Ft)				Column Totals: 104 (A) 269 (B)
Rubus idaeus	1	Y	FACU	Prevalence Index = B/A= 2.59
	1	=Total Cover		Hydrophytic Vegetation Indicators:
				1 - Rapid Test for Hydrophytic Vegetation
				2 - Dominance Test > 50%
				X 3 - Prevalence Index ≤ 3.0
				Problematic Hydrophytic Vegetation (Explain)
				Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Definitions of Vegetation Strata:
				Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.
				Woody vine – All woody vines, regardless of height.
Remarks: (Include photo numbers here or on a separate shee	+)			Hydrophytic Vegetation Present? Yes X No

Hydric vegetation present based on prevalence index alone

SOIL Sampling Point: WL-D-UP

Depth	iiptioli. (Des	Matrix	ериі пее	ded to document		Features	confirm t	he absence of Indicators.)	
(inches)	Colo	r (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 10	10YR	4/3						SANDY LOAM	
¹Type: C=Cor	ncentration, I	D=Depletion, F	RM=Reduc	ced Martix, CS=Co	vered o	r Coated S	Sand Grain	ns. ² Location: PL=Pore Lini	ng, M=Matrix.
Stratified Long Stratified Long Stratified Long Stratified Long Stratified Boundary Stratified Long Stratified Boundary Stratified Long Strati	edon (A2) c (A3) Sulfide (A4) ayers (A5) odies (A6) (LRI cy Mineral (A7) ence (A8) (LRI c (A9) (LRR P, delow Dark Sur s Surface (A12)	(LRR P, T, U) R U) T) face (A11)		Polyvalue Below S Thin Dark Surface Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surface Depleted Dark Surface Redox Depression Marl (F10) (LRR U Depleted Ochric (F Iron-Manganese M	(S9) (LR eral (F1) trix (F2) (S3) (Ce (F6) (Face (F7) (Face (F8) (F11) (MLF	R S, T, U) (LRR O) RA 151)		Indicators for Problematic I 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outsic I Piedmont Floodplain Soils (FI) Anomalous Bright Loamy Soil (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (IIII IIII IIII IIII IIII IIII IIII I	de MLRA 150A,B) F19) (LRR P, S, T) oils (F20) TF12) (LRR T, U) vegetation and wetland
Sandy Muc Sandy Gley Sandy Red Stripped M Dark Surfa	cky Mineral (S1 yed Matrix (S4 dox (S5) latrix (S6) cce (S7) (LRR I) (LRR O, S))	[[[[Umbric Surface (F Delta Ochric (F17) Reduced Vertic (F Piedmont Floodpla Anomalous Bright	(MLRA 1 18) (MLR ain Soils (151) A 150A, 15 F19) (MLR/	A 149A)	·	mauc.
Type: Fi	ill							Hydric Soil Present?	Yes No X
Remarks:								l.	
Restrictive laye	er at 10 inches	; no inclusions o	r concretion	s					

Project/Site: Orsted		City/County:	Ocean County	Sampling Date: 8/10/2020		
Applicant/Owner: Ocean Win	nd - Holtec Property		State: NJ	Sampling Point: WL-D-WET		
Investigators: Zak Lehmann	Jaclyn Chap	oman	Section, Township, Rar	nge S T Lacey R		
Landform (hillslope, terrace, etc.): Toe of Slope	Local Relief	(concave, convex, none):	Concave Slope(%) 0		
Subregion (LRRor MLRA): LRF	RT Lat: 39.8	10428	Long: -74.200485	Datum: WGS 1984		
Soil Map Unit Name: Manah	awkin muck, 0 2 percent slopes	, frequently flooded	NWI Class	ification: PSS1Eh		
Are climatic / hydrologic conditio	ns on the site typical for this tim	e of year? Yes X	No (If No, e	explain in Remarks)		
Are Vegetation, Soil	, Hydrology, significan	tly disturbed?	Are "Normal Circumstan	ices" present? Yes X No		
Are Vegetation, Soil	-	-		answers in Remarks.)		
SUMMARY OF FINDING	S - Attach a site map sh	owing sampling po	int locations, trans	ects, important features, etc.		
Hydrophytic Vegetation Presen	it? Yes X No					
Hydric Soil Present?	Yes X No	Is the Sampled Are	ea			
Wetland Hydrology Present?	Yes X No	within a Wetland?	Yes	X No		
The area is a welland based on	dominance of hydrophytic vege	tation and presence of m	yunc sons and welland ny	urology		
HYDROLOGY						
Wetland Hydrology Indicators Primary Indicators (minimum of		pply)		y Indicators (minimum of two required) ace Soil Cracks (B6)		
Surface Water (A1)	Aquatic	Fauna (B13)	= '	sely Vegetated Concave Surface (B8)		
✓ High Water Table (A2)	☐ Marl De	posits (B15) (LRR U)		nage Patterns (B10)		
Saturation (A3)	Hydroge	n Sulfide Odor (C1)		Moss Trim Lines (B16)		
Water Marks (B1)		Rhizospheres along Living R	10013 (00)	Season Water Table (C2)		
Sediment Deposits (B2)		e of Reduced Iron (C4)	Cott	fish Burrows (C8)		
Drift Deposits (B3) Algal Mat or Crust (B4)		ron Reduction in Tilled Soils	(00)	Saturation Visible on Aerial Imag.(C9) Geomorphic Position (D2)		
Iron Deposits (B5)		ck Surface (C7)		low Aquitard (D3)		
Inundation Visible on Aerial Imag		explain in Remarks)		-Neutral Test (D5)		
Water-Stained Leaves (B9)	o.y (o. /		_	agnum moss (D8) (LRR T,U)		
Field Observations:						
Surface Water Present?	Yes X No De	pth (inches): 2				
Water Table Present?		pth (inches):				
Saturation Present?	Yes No _X _ De	pth (inches):	Wetland Hydro	ology Present? Yes X No		
(includes capillary fringe)	it-i IIi-lt	uiana iaana akiana Vifanaliah	1			
Describe Recorded Data (stream gaug	ge, monitoring well, aerial photos, pre	vious inspections), if availab	e:			
Remarks:						
Standing water in the soil pit location;	wetland hydrology present					



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

Hydrophytic vegetation present

Yes X

No

Hydrophytic **Vegetation Present?** SOIL Sampling Point: WL-D-WET

Depth	cription: (Des	Matrix	aeptn ne	eded to documen		Features	Commi	the absence of Indicators.)	
(inches)	Colo	r (moist)	%	Color (moist)	%	Type 1	Loc ²	Texture	Remarks
0 to 8	10YR	2/1	100		70	CS	М	SAND	Fibrous muck; 70% particles masked with organic
8 to 20	10YR	4 / 1	100		70	CS	M	SAND	Fibrous muck; 70% of particles masked with organic
¹Type: C=C	oncentration, l	D=Depletion,	RM=Redu	uced Martix, CS=Co	overed o	r Coated	Sand Gra	ains. ² Location: PL=Pore I	Lining, M=Matrix.
Histosol Histic Ep Black His Hydrogel Stratified Organic 5 cm Mu Muck Pre 1 cm Mu Depleted Thick Da Coast Pr	ipedon (A2)	(LRR P, T, U) R U) T) face (A11))	.)	Polyvalue Below S Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Ma Depleted Matrix (I Redox Dark Surface Depleted Dark Surface Redox Depression Marl (F10) (LRR U Depleted Ochric (Iron-Manganese I) Umbric Surface (F	e (S9) (LR heral (F1) atrix (F2) =3) ace (F6) urface (F7) ns (F8) J) F11) (MLF	R S, T, U) (LRR O) RA 151)		Indicators for Problema 1 cm Muck (A9) (LRR O 2 cm Muck (A10) (LRR S Reduced Vertic (F18) (o Piedmont Floodplain Soi Anomalous Bright Loam (MLRA 153B) Red Parent Material (TF Very Shallow Dark Surfa Other (Explain in Remar	utside MLRA 150A,B) ils (F19) (LRR P, S, T) y Soils (F20) 2) ice (TF12) (LRR T, U) ks) ytic vegetation and wetland esent,
Sandy G Sandy R Stripped Dark Sur	eyed Matrix (S4 edox (S5) Matrix (S6) face (S7) (LRR I	P, S, T, U)	d):	Delta Ochric (F17 Reduced Vertic (F Piedmont Floodpl Anomalous Bright	-18) (MLR ain Soils (A 150A, 19 F19) (MLF	A 149A)	PA, 153C, 153D) Hydric Soil Present?	Yes X No
Remarks:									

Road side	aclyn Chapman Lat: 39.808934 for this time of year	Local Relief (conc	State: NJ Sampling Point: WL-E-UPL ction, Township, Range S T Lacey R cave, convex, none): Concave Slope(%) 5 ng: -74.198696 Datum: WGS 1984 NWI Classification: None	
Road side R T ents, 0-2% slope ens on the site typical	Lat: 39.808934	Local Relief (conc	rave, convex, none): Concave Slope(%) 5 ng: -74.198696 Datum: WGS 1984	
R T nents, 0-2% slope ns on the site typical t			ng: -74.198696 Datum: WGS 1984	
nents, 0-2% slope		Lor		
ns on the site typical	for this time of year		NWI Classification: None	
ns on the site typical	for this time of year			
	,	? Yes X N	lo (If No, explain in Remarks)	
	significantly distur		"Normal Circumstances" present? Yes X No	
, Hydrology, , Hydrology,		4:-0	·	
		(11	needed, explain any answers in Remarks.)	
S - Attach a site	map showing	sampling point	<u>locations, transects, important features, etc</u>).
t? Yes N	o X			
Yes N				
Yes N	WIL	nin a welland?	Yes No X	
	<u> </u>			
: one is required; chec	_	13)	Secondary Indicators (minimum of two required Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8)	d)
	_ '	· ·	Drainage Patterns (B10)	
!	Hydrogen Sulfide	Odor (C1)	Moss Trim Lines (B16)	
	Oxidized Rhizospl	neres along Living Roots	(03)	
,				
		, ,		
erv (B7)	Uther (Explain in	Remarks)		
, ()			Sphagnum moss (D8) (LRR T,U)	
Yes No	X Depth (inche	s):		
		•		
Yes No	X Depth (inche	s):	Wetland Hydrology Present? Yes No_X	X
1	t? Yes N Yes N Yes N presence of hydrophy t: one is required; check ery (B7) Yes No Yes No Yes No Yes No	t? Yes No X Is t with Yes No X No X Ves No X Depth (inche Yes No X Depth (inche Yes No X Depth (inche No X Dept	Is the Sampled Area within a Wetland? Yes	Yes



		Absolute % Cover	<u>Dominant</u> <u>Species</u>	Indicator Status	Dominance Test V				
·	Plot size: <u>30 Ft</u>)	30	V	FACW	Number of Domina That Are OBL, FA			2	(<i>A</i>
Quercus palustris Pinus resinosa		20	- Y Y	FACU	Total Number of Do	minant			
Prunus virginiana			- <u>Y</u>	FACU	Species Across all			9	(В
Sassafras albidum			- <u>'</u>	FACU					_ `
Acer rubrum		10	N	FAC	Percent of Dominal That Are OBL, FAC			22.2%	(A
		100	=Total Cover		Prevalence Index	Workshee	et:		
Shrub Stratum (F	Plot size: _30 Ft)				Total % Cover	of:	Multi	ply by:	
Clethra alnifolia		30	Υ	FACW	OBL species	0	x 1 =	0	
		30	=Total Cover			60	x 2 =	120	
erb Stratum (F	Plot size: 6 Ft)				FACW species FAC species	10	x 3 =	30	
Fragaria virginiana		20	Y	FACU	FACU species	116	x 4 =	464	
Artemisia annua		10	Υ	FACU		0	x 5 =	0	
Juniperus virginiana		10	Υ	FACU	UPL species		_		,-
in a Otraction		40	=Total Cover		Column Totals:	186	(A)	614	(I
·	Plot size: _30 Ft)				Prevalence Ir	ndex = B/A	\=	3.30	
Celastrus orbiculatus		15	Y	FACU	Hydrophytic Veget	ation Indi	cators:		
Parthenocissus quinqu	iefolia	1	N	FACU	1 - Rapid Test			aetation	
		16	=Total Cover		l — ·	, ,	•	getation	
					2 - Dominance	Test > 50	%		
					3 - Prevalence	Index ≤ 3.	0		
					Problematic Hy	/drophytic	Vegetatio	on (Ex	olaii
					Indicators of hydric so		Ū	` '	o i di i
					be present, unless di	sturbed or p	roblematic). 	
					Definitions of Vege	tation Stra	ata:		
					Tree – Woody plants approximately 20 ft ((7.6 cm) or larger in o	6 m) or mo	re in hei	ght and	3 ir OBH
					Sapling – Woody pla approximately 20 ft (than 3 in. (7.6 cm) D	6 m) or mo			
					Shrub – Woody plant approximately 3 to 20				
					Herb – All herbaceou herbaceous vines, re plants, except woody 3 ft (1 m) in height.	gardless o	of size. In	cludes	woo
					Woody vine – All woo	ody vines,	regardle	ss of he	ight
					Hydrophytic Vegetation Prese	nt? Ye:	S	No	X

Hydric vegetation not present based on less than 50% of species that are OBL, FACW, or FAC and a prevalence index greater than 3.

SOIL Sampling Point: WL-E-UPL

Pr	ofile Descri	ption: (Des		depth ne	eded to document			confirm	the absence of Indicators.)	
	Depth	0-1	Matrix	0/	Calan (masiat)		eatures	1 2	Tankuna	Damanta
_(inches)		(moist)	<u></u> %	Color (moist)	%	Type ¹	LOC 2	Texture	Remarks
0		10YR	3/2	100					FINE SANDY LOAM	
7	to 20	10YR	6/8	100					COARSE SILTY SAND	10% rounded quartz pebbles
1 T	ype: C=Cond	centration, D	=Depletion,	RM=Redu	ıced Martix, CS=Co	vered or	Coated S	Sand Gra	ains. ² Location: PL=Pore Lining	g, M=Matrix.
Н	ydric Soil In	idicators:			Polyvalue Below S	turfoos (S	0) /I DD C	T 11)	Indicators for Problematic H	íydric Soils: 3
	Histosol (A1)			Thin Dark Surface	•		1,0)	1 cm Muck (A9) (LRR O)	
	Histic Epipe	don (A2)			Loamy Mucky Mine	. , .			2 cm Muck (A10) (LRR S)	
	Black Histic	(A3)					Litte		Reduced Vertic (F18) (outside	MI DA 150A B)
	Hydrogen Si	ulfide (A4)			Loamy Gleyed Ma				Piedmont Floodplain Soils (F1	: *
	Stratified La	yers (A5)			Depleted Matrix (F	3)			Anomalous Bright Loamy Soils	
	_	lies (A6) (LRR	•		Redox Dark Surfac	` '			(MLRA 153B)	3 (1 20)
L	_	Mineral (A7)			Depleted Dark Sur				Red Parent Material (TF2)	
F	7	nce (A8) (LRF	•		Redox Depression	ıs (F8)			Very Shallow Dark Surface (T	F12) (LRR T, U)
F	_ `	A9) (LRR P, 1	•		Marl (F10) (LRR U)			Other (Explain in Remarks)	
	- '	low Dark Surf	ace (A11)		Depleted Ochric (F	-11) (MLR	RA 151)		³ Indicators of hydrophytic ve	egetation and wetland
F	7	Surface (A12)	(MLRA 150A	`	Iron-Manganese M	lasses (F1	12) (LRR O	, P, T)	hydrology must be present,	
	_	y Mineral (S1	•	,	Umbric Surface (F	13) (LRR	P. T. U)		unless disturbed or problen	natic.
E	_ ,	ed Matrix (S4)	(LIXIX O, S)		Delta Ochric (F17)		•			
F	Sandy Cleyo				Reduced Vertic (F	•	•	ND)		
F	Stripped Ma					, ,		•		
F		e (S7) (LRR F	S T U)		Piedmont Floodpla	•	, ,	,		
			, 0, 1, 0)		Anomalous Bright	Loamy So	oils (F20) (N	/ILRA 149	0A, 153C, 153D)	
L	Restrictiv	ve Layer (i	f observe	d):						
	Type:								Hydric Soil Present?	Yes No X
	Depth (inche	es):							Hydric 3011 Fresent:	Tes NO _X
Rer	narks:									
N	o hydric soils p	oresent based	on soils not m	neeting any	of the hydric soil indica	tors				

Project/Site: Orsted	City/County:	Ocean County Sampling Date: 5/7/2020
Applicant/Owner: Ocean Wind - Holtec Property		State: NJ Sampling Point: WL-E-WET
Investigators: Stephen Seymour Jac	clyn Chapman	Section, Township, Range S T Lacey R
Landform (hillslope, terrace, etc.):	Local Relief (c	oncave, convex, none): None Slope(%) 0
Subregion (LRRor MLRA): LRR T L	_at: 39.808934	Long: -74.498696 Datum: WGS 1984
Soil Map Unit Name: Manahawkin Muck, 0-2% slop	De .	NWI Classification: PFO4Cg
Are climatic / hydrologic conditions on the site typical fo	or this time of year? Yes X	No (If No, explain in Remarks)
Are Vegetation, Soil, Hydrology, s		Are "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, Hydrology, r		(If needed, explain any answers in Remarks.)
		nt locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X No		
Hydric Soil Present? Yes X No	Is the Sampled Area within a Wetland?	
Wetland Hydrology Present? Yes X No		Yes X No
Remarks: Wetland is an Atlantic white cedar swamp with a few re	ed maple. Very dense tree canopy/o	closure with sparse shrub layer.
HYDROLOGY		
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check	all that apply)	Secondary Indicators (minimum of two required) Surface Soil Cracks (B6)
Surface Water (A1)	Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
✓ High Water Table (A2)	Marl Deposits (B15) (LRR U)	Drainage Patterns (B10)
Saturation (A3)	Hydrogen Sulfide Odor (C1)	Moss Trim Lines (B16)
Water Marks (B1)	Oxidized Rhizospheres along Living Ro	oots (C3) Dry-Season Water Table (C2)
Sediment Deposits (B2)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Drift Deposits (B3)	Recent Iron Reduction in Tilled Soils (C	C6) Saturation Visible on Aerial Imag.(C9)
Algal Mat or Crust (B4)	Thin Muck Surface (C7)	Geomorphic Position (D2)
Iron Deposits (B5)	Other (Explain in Remarks)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)		FAC-Neutral Test (D5)
✓ Water-Stained Leaves (B9)		Sphagnum moss (D8) (LRR T,U)
Field Observations:		
Surface Water Present? Yes No	X Depth (inches):	
Water Table Present? Yes X No	Depth (inches): To Surface	
Saturation Present? Yes X No	Depth (inches): To Surface	Wetland Hydrology Present? Yes X No
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial)	photos, previous inspections), if available:	
Remarks: Very shallow (<10") root zone for Atlantic white cedars. Wetland		



		<u>.</u>	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Wo	rksheet:			
Tree Stratum (Plot size	: 30 Ft)				Number of Dominant			6	(A)
Chamaecyparis thyoides		· '	80	Υ	OBL	That Are OBL, FACV	v, or FAC	J:		_ ('')
Acer rubrum			10	N	FAC	Total Number of Dom				
			90	=Total Cover		Species Across all St	rata:		6	(B)
Shrub Stratum (Plot size	: 30 Ft	_)	20	 Y	FACW	Percent of Dominant That Are OBL, FACW		: —	100.0%	(A/B)
Vaccinium corymbosum			20	Υ	FACW	Prevalence Index W	orkshee	t:		
Viburnum dentatum			10	Υ	FAC	Total % Cover of			ply by:	
			50	=Total Cover		OBL species	80	x 1 =	80	
Herb Stratum (Plot size	· 6 Ft	1				·	80	x 2 =	160	
Osmundastrum cinnamomeum		_ /	40	Υ	FACW	FACW species	40	x 3 =	120	
			40	=Total Cover		FAC species				
Vine Stratum (Diet sine				Total Cover		FACU species	0	x 4 =	0	
——— (Plot size	: 30 Ft	_)				UPL species	0	x 5 =	0	
Toxicodendron radicans				_ Y	FAC	Column Totals:	200	(A)	360	(B)
			20	=Total Cover		Duning land	D/4	_	4.00	
						Prevalence Inde			1.80	
						Hydrophytic Vegetati	on Indic	ators:		
						1 - Rapid Test for	r Hydroph	nytic Ve	getation	
						X 2 - Dominance Te	est > 50%	6		
						X 3 - Prevalence In	dex ≤ 3.0)		
						Problematic Hydr	onbutic \	/ogotati	on (Evr	dain)
						Problematic Hydr Indicators of hydric soil		•		лапт)
						be present, unless distu				
						Definitions of Vegetat	ion Stra	ta:		
						Tree – Woody plants, e	excluding	woody	vines,	
						approximately 20 ft (6 r (7.6 cm) or larger in dia				
						Sapling – Woody plants	e evoludi	ina woo	dv vines	
						approximately 20 ft (6 r than 3 in. (7.6 cm) DBH	n) or moi			
						Shrub – Woody plants, approximately 3 to 20 f				
						Herb – All herbaceous herbaceous vines, rega	(non-woo	ody) plar	nts, inclu	ding
						plants, except woody vi 3 ft (1 m) in height.				
						Woody vine – All wood	y vines, r	egardle	ss of hei	ght.
						Hydrophytic Vegetation Present	? Yes	x	No	

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

Fairly even-aged stand of Atlantic white cedar; most trees are 6-10" DBH; few are 12" DBH. Hydric vegetation present based on 100% of species that are OBL, FACW, or FAC and a prevalence index less than or equal to 3.

SOIL Sampling Point: WL-E-WET

Profile Descri	• `	he depth n	eeded to document			confirm	the absence of Indicators.)	
Depth	Matrix				eatures			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc 2	Texture	Remarks
0 to 20	10YR 2 / 1	100					PEATY MUCK	Soft saturated peaty muck
¹ Type: C=Con	centration, D=Depletic	on, RM=Red	duced Martix, CS=Co	overed or	Coated S	Sand Gra	ains. ² Location: PL=Pore Lin	ing, M=Matrix.
5 cm Mucky Muck Prese 1 cm Muck Depleted Be Thick Dark Coast Prair Sandy Mucl	edon (A2) edon (A2) edon (A2) edon (A3) pulfide (A4) eyers (A5) dies (A6) (LRR P, T, U) Mineral (A7) (LRR P, T, ence (A8) (LRR U) (A9) (LRR P, T) elow Dark Surface (A11) Surface (A12) ee Redox (A16) (MLRA 15 ey Mineral (S1) (LRR O, S) ed Matrix (S4)	0A)	Polyvalue Below S Thin Dark Surface Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfa Depleted Dark Su Redox Depression Marl (F10) (LRR L Depleted Ochric (I Iron-Manganese M Umbric Surface (F Delta Ochric (F17) Reduced Vertic (F	(S9) (LR eral (F1) (trix (F2) F3) ce (F6) rface (F7) ns (F8) J) F11) (MLF Masses (F F13) (LRR	R S, T, U) LRR O) RA 151) 12) (LRR O P, T, U) 51)	, P, T)	Indicators for Problematic 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outsi Piedmont Floodplain Soils (Anomalous Bright Loamy S (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface Other (Explain in Remarks) Indicators of hydrophytic hydrology must be prese unless disturbed or problematics.	ide MLRA 150A,B) (F19) (LRR P, S, T) foils (F20) (TF12) (LRR T, U)
Stripped Ma	atrix (S6) te (S7) (LRR P, S, T, U)		Piedmont Floodpla Anomalous Bright	•		•	9A, 153C, 153D)	
Restricti Type: Depth (inch	ve Layer (if observ	/ed):					Hydric Soil Present?	Yes X No
	r soft mucky peat to > 3 ft tosol (H1) indicator.	below ground	l surface. Large open w	ater to eas	st consisten	t with aeri	ial photos and NWI mapping. Hydric soil	Is present based on criteria

Project/Site: Orst	ted		City/Cou	unty: Oce	ean County	Sampling Date:	8/10/2020
Applicant/Owner:	Ocean Wind - Fo	orked River, LLC			State: NJ	Sampling Point:	WL-F-UP
Investigators: Za	ak Lehmann	Jacl	yn Chapman	Sec	tion, Township, Rang	je S TLac	cey R
Landform (hillslope, t	errace, etc.):	Level		Local Relief (conca	ave, convex, none):	None	Slope(%) 0
Subregion (LRRor MI	LRA): LRR T	La	t: 39.811434	Lon	g: -74.209815	Datur	n: WGS 1984
Soil Map Unit Name:	Lakehurst sa	nd, 0 to 5 percent	slopes		NWI Classifi	cation: Not mapp	oed
Are climatic / hydrolo		•	•	Yes X No		(plain in Remarks)	
Are Vegetation	_		_		'Normal Circumstance	• • • • • • • • • • • • • • • • • • • •	s X No
Are Vegetation	_		-	.0			
-				(11.1	needed, explain any a ocations, transe		,
			ap onowing or	ampung pomen	ocationo, tranco	oto, important	<u>louturoo, oto:</u>
Hydrophytic Vegeta		Yes X No	Is the	Sampled Area			
Hydric Soil Present		Yes No		a Wetland?	Yes	No X	
Wetland Hydrology	Present?	Yes No	X				
HIVDROLOGY							
HYDROLOGY					0 1	In dia at any faritains	
Wetland Hydrology Primary Indicators (r		roquirod: chock (all that apply)				ım of two required)
		required, check a				ce Soil Cracks (B6)	o Surface (PS)
Surface Water (A1) High Water Table (A			Aquatic Fauna (B13)		= '	ely Vegetated Concav age Patterns (B10)	e Surface (BO)
Saturation (A3)	12)		Marl Deposits (B15)			Trim Lines (B16)	
Water Marks (B1)			Hydrogen Sulfide Ode	or (C1) es along Living Roots (eason Water Table (C	(2)
Sediment Deposits	(B2)		Presence of Reduced			sh Burrows (C8)	,
Drift Deposits (B3)	,		Recent Iron Reductio		Satura	ation Visible on Aerial	Imag.(C9)
Algal Mat or Crust ((B4)		Thin Muck Surface (` ,	Geom	orphic Position (D2)	
Iron Deposits (B5)			Other (Explain in Rer	·	Shallo	w Aquitard (D3)	
Inundation Visible of	on Aerial Imagery (B7)		,	FAC-N	Neutral Test (D5)	
Water-Stained Leav	ves (B9)				Sphag	num moss (D8) (LRR	. T,U)
Field Observations:	<u>.</u>						
Surface Water Prese	nt? Yes	No _X	Depth (inches):				
Water Table Present?		No _X			Matlemal Huduel	Ja D	Vaa Na V
Saturation Present?	Yes	No _X	Depth (inches):		Wetland Hydrol	ogy Present?	Yes No_X_
(includes capillary frin Describe Recorded Data	U /	nitoring well, aerial ph	notos, previous inspec	tions), if available:			
Remarks:							
No wetland hydrology pr	esent						



VEGETATION_	JSE SCIENTING HAIT	ies oi piants.	Absoluts	Daminant	lu dia atau	Jan	ipiniy Foili	t. <u>VV</u> L-I	-01	
			Absolute % Cover	Dominant Species	Indicator Status	Dominance Test V	Vorksheet	:		
Tree Stratum Pinus rigida	(Plot size: 30 Ft	:)	80	Y	FACU	Number of Domina That Are OBL, FA			2	(A)
			80	=Total Cover		Total Number of Do			3	(B)
Shrub Stratum	(Plot size: 30 Ft	:)	40	.,	540	Dancart of Dancing	-4 0			
Myrica pensylvar Pinus rigida	nica		40 5	Y N	FACU	Percent of Dominar That Are OBL, FAC			66.7%	(A/B)
			45	=Total Cover		Prevalence Index	Workshee	t:		
Herb Stratum	(Plot size: 6 Ft)				Total % Cover	of:	Multi	ply by:	
Panicum dichoto	· · · · · · · · · · · · · · · · · · ·	,	100	Υ	FACW	OBL species	0	x 1 =	0	
			100	=Total Cover		FACW species	100	x 2 =	200	
Vine Stratum						FAC species	40	x 3 =	120	
						FACU species	85	x 4 =	340	
						UPL species	0	x 5 =	0	
						Column Totals:	225	(A)	660	(B)
						Prevalence Ir	ndex = B/A	=	2.93	
						Hydrophytic Vegeta	ation Indic	cators:		
						1 - Rapid Test	for Hydrop	hytic Ve	getation	
						X 2 - Dominance	Test > 50°	%		
						X 3 - Prevalence	Index ≤ 3.0	0		
						Problematic Hy	drophytic '	Vegetati	on (Exp	olain)
						Indicators of hydric so be present, unless dis				
						Definitions of Veget	tation Stra	ıta:		
						Tree – Woody plants approximately 20 ft (6 (7.6 cm) or larger in 6	6 m) or mo	re in hei	ght and	
						Sapling – Woody pla approximately 20 ft (6 than 3 in. (7.6 cm) DI	6 m) or mo			
						Shrub – Woody plant approximately 3 to 20				
						Herb – All herbaceou herbaceous vines, re plants, except woody 3 ft (1 m) in height.	gardless o	f size. In	cludes v	woody
						Woody vine – All woo	ody vines,	regardle	ss of he	ight.
						Hydrophytic Vegetation Prese	nt? Yes	s_X	No	

SOIL Sampling Point: WL-F-UP

Depth	iption. (Des	Matrix	deptii net	saca to accamen		Features	COMMIN	the absence of indicators.)	
(inches)	Colo	r (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 4	10YR	3/1	50	10YR7/2	50	С	М	SAND	
4 to 20	10YR	6/6	100					SAND	
¹Type: C=Con	centration, I	D=Depletion,	RM=Redu	ced Martix, CS=Co	overed o	Coated	 Sand Gra	nins. ² Location: PL=Pore Lin	ning, M=Matrix.
5 cm Mucki Muck Prese 1 cm Muck Depleted B Thick Dark Coast Prair Sandy Muc	don (A2) (A3) sulfide (A4) ayers (A5) dies (A6) (LRI Mineral (A7) ence (A8) (LRI (A9) (LRR P, elow Dark Sur Surface (A12) ie Redox (A16 ky Mineral (S1 ed Matrix (S4 ox (S5)	(LRR P, T, U) R U) T) face (A11) b) (MLRA 150A) (LRR O, S)	[[[[[[]	Polyvalue Below S Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Ma Depleted Matrix (I Redox Dark Surfa Depleted Dark Su Redox Depressio Marl (F10) (LRR U Depleted Ochric (I Iron-Manganese I Umbric Surface (I Delta Ochric (F17 Reduced Vertic (F	e (S9) (LR neral (F1) (atrix (F2) F3) ace (F6) urface (F7) ns (F8) J) F11) (MLF Masses (F F13) (LRR c) (MLRA 1 F18) (MLRA 1	R S, T, U) (LRR O) 12) (LRR C P, T, U) 151) A 150A, 15), P, T) 0B)	Indicators for Problemation 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outsomer in the problemation of the problematical of the problematica	side MLRA 150A,B) (F19) (LRR P, S, T) Soils (F20) e (TF12) (LRR T, U)) c vegetation and wetland ent,
	ce (S7) (LRR I	P, S, T, U)	[Piedmont Floodpl Anomalous Bright			•	A, 153C, 153D)	
Restrict		if observe	d):					Hydric Soil Present?	Yes No X
Remarks: No hydric soil ii	ndicators pres	ent							

Project/Site: Orsted City/County:	Ocean County Sampling Date: 5/7/2020
Applicant/Owner: Ocean Wind - Forked River Property	State: NJ Sampling Point: WL-F-WET
Investigators: Stephen Seymour Jaclyn Chapman	Section, Township, Range S T Lacey R
Landform (hillslope, terrace, etc.): Hillslope Local Relief (cc	oncave, convex, none): Concave Slope(%) 0
Subregion (LRRor MLRA): LRR T Lat: 39.811394	Long: -74.209175 Datum: WGS 1984
Soil Map Unit Name: Lakehurst Sand 0-5% slopes	NWI Classification: Not mapped
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X	No (If No, explain in Remarks)
Are Vegetation, Soil, Hydrology, significantly disturbed?	Are "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, Hydrology, naturally problematic?	(If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach a site map showing sampling poir	
Hydrophytic Vegetation Present? Yes X No	
Hydric Soil Present? Yes V. No. Is the Sampled Area	
Wetland Hydrology Present? Yes X No within a Wetland?	Yes X No
Remarks:	
Narrow reed grass-dominated wetland. Source is a corrugated steel culvert and a concrete	
HYDROLOGY	
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required) Surface Soil Cracks (B6)
Surface Water (A1) Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Marl Deposits (B15) (LRR U)	Drainage Patterns (B10)
Saturation (A3) Hydrogen Sulfide Odor (C1)	Moss Trim Lines (B16)
Water Marks (B1) Oxidized Rhizospheres along Living Roo	ots (C3) Dry-Season Water Table (C2)
Sediment Deposits (B2) Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Drift Deposits (B3) Recent Iron Reduction in Tilled Soils (C	6) Saturation Visible on Aerial Imag.(C9)
Algal Mat or Crust (B4) Thin Muck Surface (C7)	Geomorphic Position (D2)
☐ Iron Deposits (B5) ☐ Other (Explain in Remarks)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	FAC-Neutral Test (D5)
✓ Water-Stained Leaves (B9)	Sphagnum moss (D8) (LRR T,U)
Field Observations:	
Surface Water Present? Yes No X Depth (inches):	
Water Table Present? Yes No X Depth (inches):	
Saturation Present? Yes No _X Depth (inches):	Wetland Hydrology Present? Yes X No
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Adjacent uplands are early successional red cedar and pitch pines ~5-15' tall. Saturation at approximately water-stained leaves.	15 inches below the ground surface. Wetland hydrology present based on



EGETATION Use scientific names of plants.				Sampling Point	t: WL-F-WET	
	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	:	
Tree Stratum				Number of Dominant Species That Are OBL, FACW, or FA		(A)
Shrub Stratum (Plot size: 30 Ft)				That Ale Obe, I Aow, of I A	O	_ ` ′
Juniperus virginiana	20	Υ	FACU	Total Number of Dominant Species Across all Strata:	4	(B)
Pinus resinosa	20	Y	FACU	Opecies Across all Strata.		_ (D)
	40	=Total Cover		Percent of Dominant Species That Are OBL, FACW, or FAC	50.0%	(A/B
Herb Stratum (Plot size: 6 Ft)				, ,		
Panicum dichotomiflorum	60	Υ	FACW	Prevalence Index Workshee	t:	
Phragmites australis	30	Υ	FACW	Total % Cover of:	Multiply by:	
	90	=Total Cover		OBL species 0	x 1 = 0	
Vine Stratum_				FACW species 90	x 2 = 180	
				FAC species 0	x 3 = 0	
				FACU species 40	x 4 = 160	
				UPL species 0	x 5 = 0	
				Column Totals: 130	(A) 340	(B)
				Prevalence Index = B/A	= 2.62	
				Hydrophytic Vegetation Indic	cators:	
				1 - Rapid Test for Hydrop	hytic Vegetation	
				2 - Dominance Test > 50%	%	
				X 3 - Prevalence Index ≤ 3.0)	
				Problematic Hydrophytic \	vegetation (Exp	olain)
				Indicators of hydric soil and wetlar be present, unless disturbed or pr		
				Definitions of Vegetation Stra	ta:	
				Tree – Woody plants, excluding approximately 20 ft (6 m) or mo (7.6 cm) or larger in diameter at	re in height and	
				Sapling – Woody plants, exclud approximately 20 ft (6 m) or mo than 3 in. (7.6 cm) DBH.		
				Shrub – Woody plants, excludin approximately 3 to 20 ft (1 to 6 to		
				Herb – All herbaceous (non-wook herbaceous vines, regardless oplants, except woody vines, less 3 ft (1 m) in height.	f size. Includes v	woody
				Woody vine – All woody vines, i	regardless of hei	ight.
				Hydrophytic Vegetation Present? Yes	s X No	

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

Hydrophytic vegetation present based on a prevalence index less than or equal to 3.

SOIL Sampling Point: WL-F-WET

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

D	epth		Matrix			Redox	Features			
	nches)	Colo	(moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0	to 4	10YR	4/1	100					FINE SANDY LOAM	
4	to 11	10YR	5/2	70	10YR 5/6	30	С	M	FINE SANDY LOAM	
11	to 20	10YR	3/2	100					FINE SANDY LOAM	
1Ty	pe: C=Cond	centration, [)=Depletion,	RM=Rec	educed Martix, CS=Covered or Coated Sand Grain				ains. ² Location: PL=Pore Lining,	M=Matrix.
Hy	dric Soil Ir	idicators:			Polyvalue Below	Surface (S	9) /I DD 9	T II)	Indicators for Problematic Hy	dric Soils: 3
	Histosol (A1)			Thin Dark Surfac			1,0)	1 cm Muck (A9) (LRR O)	
	Histic Epipe				Loamy Mucky Min				2 cm Muck (A10) (LRR S)	
	Black Histic				Loamy Gleyed M		(2 (0)		Reduced Vertic (F18) (outside M	(LRA 150A.B)
	Hydrogen S					` ,			Piedmont Floodplain Soils (F19)	· •
	Stratified La	yers (A5) lies (A6) (LRF	D T II)		✓ Depleted Matrix (Redox Dark Surfa	•			Anomalous Bright Loamy Soils (F20)
Н	•	. , .	(LRR P, T, U)		Depleted Dark Su	. ,			(MLRA 153B)	
. \Box	-	nce (A8) (LRF			Redox Depression		'		Red Parent Material (TF2) Very Shallow Dark Surface (TF1	2) /I PR T II)
		A9) (LRR P,	•		Marl (F10) (LRR	, ,			Other (Explain in Remarks)	2) (LIXIX 1, 0)
	Depleted Be	low Dark Sur	face (A11)			•	24 454)		_ ` ` '	
	Thick Dark S	Surface (A12)			Depleted Ochric	. , .	•		³ Indicators of hydrophytic vege hydrology must be present,	etation and wetland
	Coast Prairie	e Redox (A16) (MLRA 150A))	Iron-Manganese	`	, (), P, T)	unless disturbed or problema	tic.
Ц	-	y Mineral (S1			Umbric Surface (•			
Ц		ed Matrix (S4)			Delta Ochric (F17	, ,	,			
	Sandy Redo	` '			Reduced Vertic (F18) (MLR	A 150A, 15	0B)		
	Stripped Ma	, ,			Piedmont Floodp	lain Soils (F19) (MLR	A 149A)		
	Dark Surfac	e (S7) (LRR F	P, S, I, U)		Anomalous Brigh	t Loamy S	oils (F20) (I	MLRA 149	9A, 153C, 153D)	
	Restricti	ve Layer (if observed	d):						
	Туре:								Hydric Soil Present? Ye	es X No
	Depth (inche	es):							Tiyano con Frederic.	
	arks:		9 0							
ну	aric soils pres	sent based or	soils meeting	tne Deplei	ted Matrix (F3) indicato	r				

Subregion (LRRor MLRA): LRRT	Project/Site: (Orsted		City/	County:	Ocean County Sampling Date: 8/11/2020	
Landform (hillslope, terrace, etc.): None Local Relief (concave, convex, none): None Slope(%) Subregion (LFRor MLRA): Lat: 39.811379 Long: 74.212809 Datum: W68 1984 Soli Map Unit Name: Lakehurst Sand, 0-5% slopes Are climatic hydrologic conditions on the site typical for this time of year? Yes X No Are Vegetation Soli Hydrology significantly disturbed? Are Normal Circumstances' present? Yes X No Are Vegetation Soli Hydrology in naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS - Attach a site map showing sampling point locations, transects, important features, Hydrology Present? Hydrophytic Vegetation Present? Yes No X Wetland Hydrology Present? Wetland Hydrology Present Remarks: Hydrophytic vegetation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology Hydrophytic vegetation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology Hydrophytic vegetation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology Hydrophytic vegetation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology Hydrophytic vegetation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology Hydrophytic vegetation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology Bydrace Water (A1) Hydrophytic vegetation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology Secondary Indicators: Secondary Indicators (minimum of two requestions in Table (C2) Secondary Indicators (B8) Spansety Vegetated Concave Burface (B8) Spansety Vegetated Concave Burface (B8) Spansety Vegetated Concave Burface (B8) Spanse	Applicant/Owner:	Ocean Wind -	· Forked River, LLC			State: NJ Sampling Point: WL-G1-UP	
Subregion (LRRor MLRA): LRR T	Investigators:	Zak Lehmann	Ja	clyn Chapman		Section, Township, Range S T Lacey R	
Soil Map Unit Name: Lakehurst Sand, 0-5% slopes NWI Classification: None mapped Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If No, explain in Remarks) Are Vegetation	Landform (hillslop	e, terrace, etc.):	None		Local Relief (d	concave, convex, none): None Slope(%)	0
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If No, explain in Remarks) Are Vegetation Soil Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No Are Vegetation Soil Hydrology naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS - Attach a site map showing sampling point locations, transects, important features, Hydrophytic Vegetation Present? Yes X No X Is the Sampled Area within a Wetland Hydrology Present? Yes No X Wetland Hydrology Present? Yes No X Is the Sampled Area within a Wetland? Yes No X Wetland Hydrology Present? Yes No X Secondary Indicators (minimum of two requestation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology Indicators: HYDROLOGY Wetland Hydrology Indicators: Bufface Water (A1) Aquatic Fauna (B13) Surface Soil Cracks (B8) Hydrogen Sufface Oder (C1) Drainage Patterns (B10) Surface Water (A1) Hydrogen Sufface Oder (C1) Drainage Patterns (B10) Water Marks (B1) Oxidized Rhizospheres along Living Roots (C3) Drainage Patterns (B10) Water Marks (B1) Oxidized Rhizospheres along Living Roots (C3) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines	Subregion (LRRo	r MLRA): LRR T	I	_at: 39.811379		Long: -74.212809 Datum: WGS 1984	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If No, explain in Remarks) Are Vegetation Soil Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No Are Vegetation Soil Hydrology naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS - Attach a site map showing sampling point locations, transects, important features, Hydrophytic Vegetation Present? Yes X No X Is the Sampled Area within a Wetland Hydrology Present? Yes No X Wetland Hydrology Present? Yes No X Is the Sampled Area within a Wetland? Yes No X Wetland Hydrology Present? Yes No X Secondary Indicators (minimum of two requestation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology Indicators: HYDROLOGY Wetland Hydrology Indicators: Bufface Water (A1) Aquatic Fauna (B13) Surface Soil Cracks (B8) Hydrogen Sufface Oder (C1) Drainage Patterns (B10) Surface Water (A1) Hydrogen Sufface Oder (C1) Drainage Patterns (B10) Water Marks (B1) Oxidized Rhizospheres along Living Roots (C3) Drainage Patterns (B10) Water Marks (B1) Oxidized Rhizospheres along Living Roots (C3) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines (B16) Drainage Patterns (B10) Moss Tim Lines	Soil Map Unit Nar	ne: Lakehurst	Sand. 0-5% slopes			NWI Classification: None mapped	
Are Vegetation, Soil, Hydrology, significantly disturbed?	Are climatic / hvdi		•		r? Yes X		
Are Vegetation	_	_		-			0
SUMMARY OF FINDINGS - Attach a site map showing sampling point locations, transects, important features, which is the sampled Area within a Wetland Hydrology Present? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland Hydrology Present? Yes No X Is the Sampled Area within a Wetland Hydrology Present? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland Proposed Sufface Value of the Sampled Area within a Wetland Proposed Sufface Soil Cracks (B6) Is the Sampled Area within a Wetland Based on lack of hydric soils and wetland hydrology Indicators (minimum of two required; check all that apply) Is surface Soil Cracks (B6) Is shared	_			_			
Hydrochytic Vegetation Present? Yes X No X Wetland Hydrology Present? Yes No X Remarks: Hydrophytic vegetation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology Indicators: Hydrophytic vegetation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology Indicators: Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) Hydrogen Sulfide Odor (C1) Saturation (A3) Hydrogen Sulfide Odor (C1) Water Marks (B1) Sediment Deposits (B15) Drift Deposits (B3) Recent from Reduction in Tilled Soils (C6) Drift Deposits (B3) Recent from Reduction in Tilled Soils (C6) In Indicators (Water Marks (B4) In Inh Muck Surface (C7) Water-Stained Leaves (B9) Presence of Reduced from (C4) Inhin Muck Surface (C7) Water Table Present? Water Table Present? Yes No X Depth (inches): Wetland Hydrology Present? Yes No Remarks:							
Hydric Soil Present? Wetland Hydrology Present? Wetland Hydrology Present? Wetland Hydrology Present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology Hydrophytic vegetation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology Hydrophytic vegetation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology Indicators (minimum of two requestions) and the prevalence of Reduced Formation (B13) Hydrogen Sulfide Odor (C1)	SUMMARY C	<u>)F FINDINGS -</u>	Attach a site i	map showing	sampling poi	int locations, transects, important features,	etc.
Wetland Hydrology Present? Wetland Hydrology Indicators: Hydrophytic vegetation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) High Water Table (A2) High Water Table (A2) Aduatic Fauna (B13) Saturation (A3) Hydrogen Sulfide Odor (C1) Sediment Deposits (B1) Ordi Deposits (B2) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Finh Muck Surface (C7) In no Deposits (B3) In nundation Visible on Aerial Imagery (B7) Water Table (A2) Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16) Drainage Patterns (B10) Drainage Patterns (B10) Moss Trim Lines (B16) Drainage Patterns (B10) Moss Trim Li	Hydrophytic Veg	getation Present?	Yes X No)			
Wetland Hydrology Present? Remarks: Hydrophytic vegetation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology HYDROLOGY Wetland Hydrology Indicators: Wetland Hydrology Indicators: Wetland Hydrology Indicators: Wetland Hydrology Indicators: Secondary Indicators (minimum of two requestions) Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Hydrogen Sulfide Odor (C1) Saturation (A3) Hydrogen Sulfide Odor (C1) Sediment Deposits (B1) Water Marks (B1) Odized Rhizospheres along Living Roots (C3) Sediment Deposits (B2) Presence of Reduced Iron (C4) Drift Deposits (B3) Recent Iron Reduction in Tilled Soils (C8) Saturation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Field Observations: Surface Sulface (C7) Shallow Aquitard (D3) FAC-Neutral Test (D5) Sphagnum moss (D8) (LRR T, U) Wetland Hydrology Present? Yes No X Depth (inches): Water Table Present? Yes No X Depth (inches): Saturation Present? Yes No X Depth (inches): Water Table Present? Yes No X Depth (inches): Water Geometric Position (D2) Sphagnum moss (D8) (LRR T, U) Wetland Hydrology Present? Yes No No X Depth (inches): Wetland Hydrology Present? Yes No No X Depth (inches): Wetland Hydrology Present? Yes No No Wetland Hydrology Present? Yes No Wetland Hydrolo	Hydric Soil Pres	ent?	Yes No				
Remarks: Hydrophytic vegetation present based on prevalence index alone; however, area is not a wetland based on lack of hydric soils and wetland hydrology HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) High Water Table (A2) Marl Deposits (B15) Mater Marks (B1) Seturation (A3) Hydrogen Sulfide Odor (C1) Moss Trim Lines (B16) Moss Trim Lines (B16) Presence of Reduced Iron (C4) Sediment Deposits (B3) Recent Iron Reduction in Tilled Soils (C6) Algal Mat or Crust (B4) Thin Muck Surface (C7) Inundation Visible on Aerial Imagery (B7) Water Stained Leaves (B9) FAC-Neutral Test (D5) Water Table Present? Yes No X Depth (inches): Water Table Present? Yes No X Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Wetland Hydrolo	ogy Present?	Yes No	WII	.nin a vveuanu?	Yes No X	
HYDROLOGY Wetland Hydrology Indicators: Secondary Indicators (minimum of two required; check all that apply) Surface Soil Cracks (B6)							
Wetland Hydrology Indicators (minimum of one is required; check all that apply) Surface Water (Ar1)							
Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) High Water Table (A2) Marl Deposits (B15) (LRR U) Saturation (A3) Hydrogen Sulfide Odor (C1) Water Marks (B1) Sediment Deposits (B2) Presence of Reduced Iron (C4) Marl Deposits (B3) Algal Mat or Crust (B4) Thin Muck Surface (C7) Mater-Stained Leaves (B9) Field Observations: Surface Water Present? Yes No X Depth (inches): Water Marks: Remarks: Semarks: Semarks: Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drint Deposits (B10) Moss Trim Lines (B16) Moss Trim Lines (B16) Moss Trim Lines (B16) Dry-Season Water Table (C2) Crayfish Burrows (C8) Dry-Season Water Table (C2) Crayfish Burrows (C8) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Image.(C9) Saturation Visible on Aerial Image.(C9) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Field Observations: Surface Water Present? Yes No X Depth (inches): Wetland Hydrology Present? Yes No Remarks:	HYDROLOGY						
Surface Water (A1)	•	0.0				Secondary Indicators (minimum of two requ	ıired)
High Water Table (A2)	Primary Indicator	's (minimum of one	∍ is required; check	all that apply)			
Saturation (A3)		` '		Aquatic Fauna (B	13)		
Water Marks (B1)				Marl Deposits (B	15) (LRR U)		
Sediment Deposits (B2)	_ ` ′			Hydrogen Sulfide	Odor (C1)		
Drift Deposits (B3) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Algal Mat or Crust (B4) Thin Muck Surface (C7) Geomorphic Position (D2) Iron Deposits (B5) Other (Explain in Remarks) Shallow Aquitard (D3) FAC-Neutral Test (D5) Sphagnum moss (D8) (LRR T,U) Field Observations: Surface Water Present? Yes No X Depth (inches): Water Table Present? Yes No X Depth (inches): Saturation Present? Yes No X Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	_ `	•		Oxidized Rhizosp	heres along Living R	10013 (00)	
Algal Mat or Crust (B4)	_	` '		Presence of Redu	uced Iron (C4)		
Iron Deposits (B5)		•		Recent Iron Redu	ction in Tilled Soils ((CO)	
Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) FAC-Neutral Test (D5) Sphagnum moss (D8) (LRR T,U) Field Observations: Surface Water Present? Yes No X Depth (inches): Water Table Present? Yes No X Depth (inches): Saturation Present? Yes No X Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			L	ot Thin Muck Surfac	ce (C7)		
Water-Stained Leaves (B9) Sphagnum moss (D8) (LRR T,U)		•		Other (Explain in	Remarks)		
Field Observations: Surface Water Present? Yes No X Depth (inches): Water Table Present? Yes No X Depth (inches): Saturation Present? Yes No X Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:			(B7)			. ,	
Surface Water Present? Yes No X Depth (inches): Water Table Present? Yes No X Depth (inches): Saturation Present? Yes No X Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	Water-Stained I	Leaves (B9)				Sphagnum moss (D8) (LRR T,U)	
Water Table Present? Yes No X Depth (inches): Saturation Present? Yes No X Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	Field Observatio	ons:					
Saturation Present? Yes No X Depth (inches): Wetland Hydrology Present? Yes No (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	Surface Water Pr	esent? Y	es No	X Depth (inche	es):		
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	Water Table Pres	ent? Y	es No	X Depth (inche	es):	, , , , , ,	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:			es No	X Depth (inche	es):	wetiand Hydrology Present? Yes No	0_X_
Remarks:		, ,	monitoring well aerial	nhotos previous ins	nections) if available	۵۰	
		y present					



		Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum	(Plot size: 30 Ft)			
Juniperus virginiar	a	20	Υ	FACU
Prunus serotina		5	Υ	FACU
		25	=Total Cover	
Shrub Stratum	(Plot size: _30 Ft)			
Rubus idaeus		20	Υ	FACU
		20	=Total Cover	
<u>Herb Stratum</u>	(Plot size: 6 Ft)			
Panicum dichotom	iflorum	80	Υ	FACW
Eupatorium perfoli	atum	10	N	FACW
Phragmites austra	lis	10	N	FACW
		100	=Total Cover	
Vine Stratum_				

Prevalence Index = B/A= Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2.62

- 2 Dominance Test > 50%
- X 3 Prevalence Index ≤ 3.0

Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes X No

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

Hydrophytic vegetation based on prevalence index alone

SOIL Sampling Point: WL-G1-UP

Profile Descri	ription: (Des	cribe to the	depth ne	eded to documen	t the ind	icator o	r confirm	the absen	ce of Indicators.)			
Depth		Matrix		Redox Features								
(inches)	Color	(moist)	%	Color (moist)	%	Type	1 Loc 2		Texture	Re	marks	
0 to 4	10YR	4/3	100					SAND				
4 to 12	10YR	6/6	100					SAND				
12 to 20	10YR	7/2	60	10YR5/6	40	С	M	SAND				
¹Type: C=Cor	ncentration, [)=Depletion,	, RM=Redu	uced Martix, CS=C	overed o	r Coated	Sand Gra	ains. 2	Location: PL=Pore	e Lining, M=Matr	ix.	
Stratified L Organic Bo 5 cm Muck Muck Pres 1 cm Muck Depleted E Thick Dark Coast Prai	edon (A2) c (A3) Sulfide (A4) ayers (A5) odies (A6) (LRF y Mineral (A7) ence (A8) (LRF (A9) (LRR P, - delow Dark Suri Surface (A12) rie Redox (A16	(LRR P, T, U) R U) Fi face (A11) (MLRA 150A) (LRR O, S)		Polyvalue Below Thin Dark Surface Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (Redox Dark Surface Redox Depressio Marl (F10) (LRR I Depleted Ochric (Iron-Manganese (e (S9) (LR neral (F1) fatrix (F2) F3) ace (F6) urface (F7) ns (F8) J) F11) (MLF Masses (F	R S, T, U) (LRR O) RA 151) 12) (LRR P, T, U)	, ·	1 1 2 2 R R P P (I R R P V P P P P P P P P P P P P P P P P	cm Muck (A9) (LRR cm Muck (A9) (LRR cm Muck (A10) (LRR ceduced Vertic (F18) Piedmont Floodplain Stanomalous Bright Loam MLRA 153B) Red Parent Material (1/2 (Fry Shallow Dark Surpher (Explain in Rem 1/3 Indicators of hydrophydrology must be unless disturbed or	O) R S) (outside MLRA 150 Soils (F19) (LRR P, Imy Soils (F20) IFF2) Irface (TF12) (LRR - Irrarks) Onlytic vegetation an present,	A,B) S, T) T, U)	
Sandy Rec Stripped M Dark Surfa	` '	P, S, T, U)	q).	Delta Ochric (F17 Reduced Vertic (I Piedmont Floodp Anomalous Brigh	=18) (MLR lain Soils (A 150A, 1 F19) (MLF	RA 149A)	9A, 153C, 153	BD)			
Type: Depth (incl			<u></u>					Hydric	Soil Present?	Yes	No X	
Remarks:												
No hydric soil	ndicators prese	ent										

	City/Co	ounty: Ocean	County	Sampling Date:	5/7/2020
d - Forked River I	Property		State: NJ	Sampling Point:	WL-G-WET
our	Jaclyn Chapman	Section	, Township, Range	e S T Lac	ey R
: None		Local Relief (concave,	convex, none): N	lone	Slope(%) 0
т	Lat: 39.811349	Long:	-74.213354	Datum	n: WGS 1984
rst sand 0-5% slo	pes		NWI Classific	cation: Not mapp	ed
is on the site typic	cal for this time of year?	Yes X No	(If No, ex	olain in Remarks)	
_, Hydrology	, significantly disturbe	ed? Are "Nor	mal Circumstance	s" present? Yes	s X No
_, Hydrology	, naturally problemati	ic? (If nee	ded, explain any a	nswers in Remark	s.)
3 - Attach a s	ite map showing s	sampling point loca	ations, transed	cts, important	features, etc.
:? Yes X	No				
Yes X					
	No withi	in a wetiand?	Yes	X No	
			Secondary I	ndicators (minimu	m of two required)
	heck all that apply)			•	in or two required)
2110 10 10 quii 0u, 0i				` '	e Surface (R8)
	_ ` `	,	= '		e Surface (DO)
				rim Lines (B16)	
		dor (C1)		` '	2)
	Hydrogen Sulfide O	, ,	Dry-Se	ason Water Table (C:	
	Oxidized Rhizosphe	eres along Living Roots (C3)		ason Water Table (Ca h Burrows (C8)	2)
	Oxidized Rhizosphe	eres along Living Roots (C3) ed Iron (C4)	Crayfis	h Burrows (C8)	
	Oxidized Rhizosphe Presence of Reduce Recent Iron Reducti	eres along Living Roots (C3) ed Iron (C4) ion in Tilled Soils (C6)	☐ Crayfis☐ Saturat	h Burrows (C8) ion Visible on Aerial I	
	Oxidized Rhizosphe Presence of Reduce Recent Iron Reducti Thin Muck Surface	eres along Living Roots (C3) ed Iron (C4) ion in Tilled Soils (C6) (C7)	Crayfisi Saturat Geomo	h Burrows (C8) ion Visible on Aerial I orphic Position (D2)	
ny (87)	Oxidized Rhizosphe Presence of Reduce Recent Iron Reducti	eres along Living Roots (C3) ed Iron (C4) ion in Tilled Soils (C6) (C7)	Crayfisi Saturat Geomo	h Burrows (C8) ion Visible on Aerial I orphic Position (D2) v Aquitard (D3)	
ery (B7)	Oxidized Rhizosphe Presence of Reduce Recent Iron Reducti Thin Muck Surface	eres along Living Roots (C3) ed Iron (C4) ion in Tilled Soils (C6) (C7)	Crayfisl Saturat Geomo Shallov FAC-No	h Burrows (C8) ion Visible on Aerial I rphic Position (D2) v Aquitard (D3) eutral Test (D5)	lmag.(C9)
ery (B7)	Oxidized Rhizosphe Presence of Reduce Recent Iron Reducti Thin Muck Surface	eres along Living Roots (C3) ed Iron (C4) ion in Tilled Soils (C6) (C7)	Crayfisl Saturat Geomo Shallov FAC-No	h Burrows (C8) ion Visible on Aerial I orphic Position (D2) v Aquitard (D3)	lmag.(C9)
	Oxidized Rhizosphe Presence of Reduce Recent Iron Reducti Thin Muck Surface Other (Explain in Re	eres along Living Roots (C3) ed Iron (C4) ion in Tilled Soils (C6) (C7) emarks)	Crayfisl Saturat Geomo Shallov FAC-No	h Burrows (C8) ion Visible on Aerial I rphic Position (D2) v Aquitard (D3) eutral Test (D5)	lmag.(C9)
Yes No	Oxidized Rhizosphe Presence of Reduce Recent Iron Reducti Thin Muck Surface Other (Explain in Re	eres along Living Roots (C3) ed Iron (C4) ion in Tilled Soils (C6) (C7) emarks)	Crayfisl Saturat Geomo Shallov FAC-No	h Burrows (C8) ion Visible on Aerial I rphic Position (D2) v Aquitard (D3) eutral Test (D5)	lmag.(C9)
Yes No Yes _X No	Oxidized Rhizosphe Presence of Reduce Recent Iron Reducti Thin Muck Surface Other (Explain in Re	eres along Living Roots (C3) ed Iron (C4) ion in Tilled Soils (C6) (C7) emarks)):	Crayfis Saturat Geomo Shallov FAC-N Sphagr	h Burrows (C8) ion Visible on Aerial I rphic Position (D2) v Aquitard (D3) eutral Test (D5) num moss (D8) (LRR	Imag.(C9) T,U)
Yes No	Oxidized Rhizosphe Presence of Reduce Recent Iron Reducti Thin Muck Surface Other (Explain in Re	eres along Living Roots (C3) ed Iron (C4) ion in Tilled Soils (C6) (C7) emarks)):	Crayfisl Saturat Geomo Shallov FAC-No	h Burrows (C8) ion Visible on Aerial I rphic Position (D2) v Aquitard (D3) eutral Test (D5) num moss (D8) (LRR	lmag.(C9)
Yes No YesX No YesX No	Oxidized Rhizosphe Presence of Reduce Recent Iron Reducti Thin Muck Surface Other (Explain in Re	eres along Living Roots (C3) ed Iron (C4) ion in Tilled Soils (C6) (C7) emarks) b:	Crayfis Saturat Geomo Shallov FAC-N Sphagr	h Burrows (C8) ion Visible on Aerial I rphic Position (D2) v Aquitard (D3) eutral Test (D5) num moss (D8) (LRR	Imag.(C9) T,U)
	None Trest sand 0-5% slopes on the site typic year. Hydrology, Hydrology, Hydrology, YesX YesX YesX YesX	In the state of this time of year? In the site typical for this time of year? In the site typical for this time of year? In the site typical for this time of year? In the site typical for this time of year? In the site typical for this time of year? In the site map showing state in the site map show	Jaclyn Chapman Section Local Relief (concave, Toward Lat: 39.811349 Long: Instead 0-5% slopes as on the site typical for this time of year? Yes X Now, Hydrology , significantly disturbed? Are "Norw, Hydrology , naturally problematic? (If needs? Yes X Now, Yes X	None Local Relief (concave, convex, none): Note of the street sand 0-5% slopes NWI Classificates on the site typical for this time of year? Yes _ X _ No (If No, explain any a great street sand 0-5% slopes NWI Classificates on the site typical for this time of year? Yes _ X _ No (If No, explain and the site typical for this time of year? Yes _ X _ No (If needed, explain any a great street str	Secondary Indicators (minimu pone is required; check all that apply) Surface Soil Cracks (B6) Sparsely Vegetated Concave (B13) Sparsely Vegetated Concave (B14) Sparsely Vegetated Concave (B14) Sparsely Vegetated Concave (Convex, none): None Secondary None T Lac



(Plot size: 30 Ft

(Plot size: 6 Ft

Tree Stratum

Shrub Stratum

Herb Stratum

Vine Stratum

Juniperus virginiana

Panicum dichotomiflorum

Phragmites australis

<u>Absolute</u>

% Cover

10

10

40

30

70

Dominant

Species

Υ

=Total Cover

=Total Cover

Indicator

Status

FACU

FACW

FACW

Remarks: (Incli	ude photo numbers he	ere or on a ser	parate sheet.)

Hydrophytic vegetation present based on dominance of species that are OBL, FACW, or FAC greater than 50% and a prevalence index less than or equal to 3

Χ

No

Yes

Hydrophytic Vegetation Present? SOIL Sampling Point: WL-G-WET

Prof	ile C	Descri	ption: (De	scribe to the	depth ne	eeded to documen			confirm	the absence of Indicators.)		
	pth			Matrix				Features				
(inc	ches	s)	Col	or (moist)	%	Color (moist)	%	Type	Loc 2	Texture	Remarks	
0	to	4	10YR	6 / 6	100					FINE SAND	Wet fine sand	
4	to	20	10YR	4 / 1	70	10YR 5/4	10YR 5/4 30 C M FINE SAND Wet silty sand					
¹Typ	e: C	=Con	centration,	D=Depletion,	RM=Red	uced Martix, CS=Co	overed o	r Coated	Sand Gra	ains. ² Location: PL=Pore Lin	ing, M=Matrix.	
	Histo Histio Black Hydro Strati Drga Muck I cm Deple Coas Sand Sand Sand	sol (A1 c Epipe c Histic cycle S His	don (A2) (A3) ulfide (A4) yers (A5) dies (A6) (LF Mineral (A7 nnce (A8) (LF A9) (LRR P elow Dark St Surface (A1) e Redox (A1 cy Mineral (Se d Matrix (Se ox (S5) trix (S6)	RR P, T, U) () (LRR P, T, U) () (TR U) () (T) () (T		Polyvalue Below S Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Ma Depleted Matrix (I Redox Dark Surface Depleted Dark Surface Redox Depression Marl (F10) (LRR U Depleted Ochric (Iron-Manganese N Delta Ochric (F17 Reduced Vertic (F17 Reduced Vertic (F17 Piedmont Floodpl Anomalous Bright	e (S9) (LR neral (F1) fatrix (F2) f3) ace (F6) arface (F7) f1) (MLF Masses (F f13) (LRR f13) (LRR f18) (MLRA f18) (MLR	R S, T, U) (LRR O) 12) (LRR () P, T, U) 151) A 150A, 1. F19) (MLF	O, P, T) 50B) RA 149A)	Indicators for Problematic 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outs Piedmont Floodplain Soils (Anomalous Bright Loamy S (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface Other (Explain in Remarks) Indicators of hydrophytic hydrology must be prese unless disturbed or prob	ide MLRA 150A,B) (F19) (LRR P, S, T) soils (F20) (TF12) (LRR T, U) vegetation and wetland	
	Res	tricti	ve Layer	(if observe	d):							
1	Гуре	:								Hydric Soil Present?	Yes X No	
[Deptl	h (inch	es):							nyunc 3011 Fresent:	Tes X NO	
One One		turtle a	and northern	harrier observe	d in vicinity.	. Hydric soils present b	ased on s	oils meetir	ng criteria f	for the Depleted Matrix (F3) indicator.		

Project/Site: Orsted		City/County:	Ocean County Sampling Date: 8/10/2020
Applicant/Owner: Ocean Wind	- JCP&L Property		State: NJ Sampling Point: WL-H-UP
Investigators: Zak Lehmann	Ja	aclyn Chapman	Section, Township, Range S T Lacey R
Landform (hillslope, terrace, etc.):	Level	Local Relief ((concave, convex, none): None Slope(%) 0
Subregion (LRRor MLRA): LRR T		Lat: 39.810120	Long: -74.204154 Datum: WGS 1984
· · · · · · · · · · · · · · · · · · ·	its, 0 - 2% slopes	00.010120	NWI Classification: Not mapped
•	•	in this time of warm?	
Are climatic / hydrologic conditions			<u> </u>
Are Vegetation, Soil,			Are "Normal Circumstances" present? Yes X No
Are Vegetation, Soil,	Hydrology,	naturally problematic?	(If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS	- Attach a site	map showing sampling po	oint locations, transects, important features, etc.
			•
Hydrophytic Vegetation Present?	Yes X N	Is the Sampled Are	ea
Hydric Soil Present?	Yes N	within a Wetland?	Yes No X
Wetland Hydrology Present?	Yes N	o <u>X</u>	
hydrology			
HYDROLOGY			
Water Table Present?	(B7) /es No /es No /es No	Aquatic Fauna (B13) Marl Deposits (B15) (LRR U) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living for Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Thin Muck Surface (C7) Other (Explain in Remarks) X Depth (inches): X Depth (inches):	Crayfish Burrows (C8) Saturation Visible on Aerial Imag.(C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Sphagnum moss (D8) (LRR T,U) Wetland Hydrology Present? Yes No_X
Remarks: No wetland hydrology present			



	Jse scientific names o	•						-		
			Absolute % Cover	Dominant Species	Indicator Status	Dominance Test V				
Free Stratum	(Plot size: 30 Ft	_)				Number of Domina That Are OBL, FA			3	(
Juniperus virgini	ana		20	Y	FACU	- , , , , , , , , , , , , , , , , , , ,				
Pinus rigida			20	_ Y	FACU	Total Number of Do Species Across all			6	(E
Acer rubrum			10	_ Y	FAC	Openies Across an	Otrata.		0	_ ('
Shrub Stratum	(Plot size: 30 Ft	١	50	=Total Cover		Percent of Dominar That Are OBL, FAC		:	50.0%	(A
Viburnum dentat	•	_)	1	Υ	FAC	Prevalence Index	Workshee	:		
			1	=Total Cover		Total % Cover	of:	Multip	oly by:	
Herb Stratum	(Plot size: 6 Ft)				OBL species	0	x 1 =	0	
Phragmites aust		_ /	60	Υ	FACW	FACW species	60	x 2 =	120	
Rubus idaeus			20	Υ	FACU	·	16	x 3 =	48	
Polygonum acho	preum		5	N	FAC	FAC species	60	x 4 =	240	
			85	=Total Cover		FACU species	0	x 5 =	0	
ine Stratum_						UPL species	136	(A)	408	(
						Column Totals:	100	_(/~)	400	
						Prevalence Ir			3.00	_
						Hydrophytic Veget	ation Indic	ators:		
						1 - Rapid Test	for Hydroph	ytic Ve	getation	
						2 - Dominance	Test > 50%	, D		
						X 3 - Prevalence	Index ≤ 3.0			
						Problematic Hy	drophytic \	egetation	on (Exp	olai
						Indicators of hydric so be present, unless dis				
						Definitions of Veget	tation Stra	a:		
						Tree – Woody plants approximately 20 ft ((7.6 cm) or larger in o	m) or mor	e in hei	ght and	
						Sapling – Woody pla approximately 20 ft (6 than 3 in. (7.6 cm) Di	6 m) or mor	ng wood e in hei	dy vines ght and	, les
						Shrub – Woody plant approximately 3 to 20				
						Herb – All herbaceou herbaceous vines, re plants, except woody 3 ft (1 m) in height.	gardless of	size. In	cludes v	NOC
						Woody vine – All woo	ody vines, r	egardles	ss of he	gh
						Hydrophytic Vegetation Prese	nt? Yes	x	No	

Hydrophytic vegetation present based on pravelaence index alone

SOIL Sampling Point: WL-H-UP

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

Depth		Matrix		<u> </u>		-eatures			
(inches)		(moist)	%	Color (moist)	- %	Type	Loc 2	Texture	Remarks
0 to 4	10YR	2/1	60	10YR6/2	40	С	M	SAND	
4 to 12	10YR	6/2	60	10YR2/1	40	_C	_M	SAND	
12 to 20	10YR	5/6	100					SAND	
¹Type: C=Con	centration, D	=Depletion, l	RM=Redu	ced Martix, CS=Co	overed o	r Coated	Sand Gra	ains. ² Location: PL=Pore L	_ining, M=Matrix.
Hydric Soil I			[Polyvalue Below	Surface (S	8) (LRR S	i, T, U)	Indicators for Problemat	tic Hydric Soils: 3
Histosol (A1	•		[Thin Dark Surface	e (S9) (LR	R S, T, U)		1 cm Muck (A9) (LRR O)	<u> </u>
Histic Epipe			[Loamy Mucky Mir	neral (F1)	(LRR O)		2 cm Muck (A10) (LRR S	5)
☐ Black Histic			[Loamy Gleyed Ma	atrix (F2)			Reduced Vertic (F18) (ou	ıtside MLRA 150A,B)
Hydrogen S			[Depleted Matrix (I	=3)			Piedmont Floodplain Soil	is (F19) (LRR P, S, T)
Stratified La	iyers (A5) dies (A6) (LRR	P, T, U)	[Redox Dark Surfa	•			Anomalous Bright Loamy (MLRA 153B)	/ Soils (F20)
5 cm Mucky	Mineral (A7) (LRR P, T, U)	[Depleted Dark Su	ırface (F7)			Red Parent Material (TF2	2)
Muck Prese	nce (A8) (LRR	(U)	[Redox Depression	ns (F8)			Very Shallow Dark Surfa	•
1 cm Muck	(A9) (LRR P, T		[Marl (F10) (LRR I	J)			Other (Explain in Remark	(S)
= .	elow Dark Surf	ace (A11)	[Depleted Ochric (•	RA 151)			rtic vegetation and wetland
=	Surface (A12)			Iron-Manganese I	, ,	,) P T)	hydrology must be pre	esent,
		(MLRA 150A)		Umbric Surface (I			0,1,1)	unless disturbed or pr	oblematic.
= '	ky Mineral (S1)	(LRR O, S)	ι [_					
	ed Matrix (S4)		l r	Delta Ochric (F17		-			
Sandy Redo			Į	Reduced Vertic (F			•		
Stripped Ma	• ,	O T II)	Į	Piedmont Floodpl	ain Soils (F19) (MLF	RA 149A)		
Dark Suriac	e (S7) (LRR P	, 3, 1, 0)	[Anomalous Bright	Loamy S	oils (F20)	(MLRA 149	9A, 153C, 153D)	
Restricti	ve l aver (i	f observed):						
Type:	· · · - · · · · · · · · · · · · · · · ·		,-						
Depth (inch	es).							Hydric Soil Present?	Yes No X
Remarks:									
No hydric soil ir	dicators prese	nt							
,									

	City/County: Oce	an County Sampling	Date: 8/10/2020
Holtec Property		State: NJ Sampling	Point: WL-H-WET
Jaclyn Cha	oman Sec	tion, Township, Range S	T Lacey R
Depression	Local Relief (conca	ave, convex, none): None	Slope(%) 0
Lat: 39.8	10053 Long	g: -74.204066	Datum: WGS 1984
n muck. 0-2 percent slopes	frequently flooded	NWI Classification: PE	M1Fh
•	• •	(If No. explain in Rer	narks)
• •		 ` · · ·	,
-	and black of a		
	(11.1		
Yes X No			
	Is the Sampled Area		
	within a Wetland?	Yes X No	
res X NO			
ce of hydrophytic vegetatic	n and presence of hydric soils	and wetland hydrology	
		Secondary Indicators (i	minimum of two required)
is required; check all that a	pply)	Surface Soil Cracks	(B6)
Aquatic	Fauna (B13)		Concave Surface (B8)
		Drainage Patterns (310)
		Moss Trim Lines (B	16)
	, ,	Dry-Season Water	Table (C2)
			8)
		Saturation Visible or	n Aerial Imag.(C9)
	, ,	Geomorphic Positio	n (D2)
		Shallow Aquitard (D	3)
37)	Aplain in Kemarks)	FAC-Neutral Test (D	05)
,		Sphagnum moss (D	8) (LRR T,U)
s No X De	pth (inches):		
	oth (inches):		
s No X De	oth (inches): oth (inches): oth (inches):	Wetland Hydrology Preser	nt? Yes X No
s No X De	oth (inches):	Wetland Hydrology Preser	nt? Yes <u>X</u> No
	Jaclyn Char Depression Lat: 39.8 In muck, 0-2 percent slopes, in the site typical for this time dydrology, significant dydrology, naturally particularly for the site typical for this time dydrology, naturally particularly for the site typical for this time dydrology, significant dydrology, naturally particularly for significant dydrology, not significant dydrology	Jaclyn Chapman Sec	Jaclyn Chapman Section, Township, Range S Depression Local Relief (concave, convex, none): None Lat: 39.810053 Long: -74.204066 In muck, 0-2 percent slopes, frequently flooded NWI Classification: PE Althorology , significantly disturbed? Are "Normal Circumstances" present/ Advorlogy , naturally problematic? (If needed, explain any answers in FA Attach a site map showing sampling point locations, transects, import Yes X No



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

Hydrophytic vegetation present

SOIL Sampling Point: WL-H-WET

De		inpulon. (Des	Matrix	uopiii iid			Features		The absence of indicators.			
(inc	ches)	Colo	r (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Rema	arks	
0	to 4	10YR	2/1	100					LOAMY SAND	Black orga	nic	
4	to 20	10YR	2 / 1	100		70	CS	M	LOAMY SAND	70% particl with organi	les masked c	
1Type	e: C=Co	oncentration, I	D=Depletion,	, RM=Red	uced Martix, CS=Co	overed o	r Coated	Sand Gra	ains. ² Location: PL=Pore Linin	ng, M=Matrix.		
_		Indicators:			Polyvalue Below	Surface (S	88) (LRR S	, T, U)	Indicators for Problematic I	Hydric Soils:	3	
Histosol (A1)					Thin Dark Surface	e (S9) (LR	R S, T, U)		1 cm Muck (A9) (LRR O)			
Histic Epipedon (A2) Black Histic (A3)					Loamy Mucky Mineral (F1) (LRR O)				2 cm Muck (A10) (LRR S)			
		Sulfide (A4)			Loamy Gleyed Matrix (F2)				Reduced Vertic (F18) (outside MLRA 150A,B)			
=		Layers (A5)			Depleted Matrix (F3)				Piedmont Floodplain Soils (F	19) (LRR P, S,	T)	
		Bodies (A6) (LRI	R P, T, U)		Redox Dark Surface (F6)				Anomalous Bright Loamy Soils (F20)			
	-	ky Mineral (A7)			Depleted Dark Surface (F7)				(MLRA 153B) Red Parent Material (TF2)			
	∕luck Pre	sence (A8) (LR	R U)		Redox Depressions (F8)					TF12) (I RR T I	D.	
1	cm Muc	k (A9) (LRR P,	T)		Marl (F10) (LRR U)				Other (Explain in Remarks)			
	Depleted	Below Dark Sur	rface (A11)		Depleted Ochric (F11) (MLRA 151)							
		k Surface (A12)			Iron-Manganese Masses (F12) (LRR O, P, T)				Indicators of hydrophytic vegetation and wetland hydrology must be present,			
		airie Redox (A16		١)		,	, ,	J, P, 1)	unless disturbed or problematic.			
	-	ıcky Mineral (S1			Umbric Surface (F13) (LRR P, T, U)							
_	-	eyed Matrix (S4)		Delta Ochric (F17) (MLRA 151)							
_	Sandy Re	` ,			Reduced Vertic (F18) (MLRA 150A, 150B)							
		Matrix (S6)			Piedmont Floodplain Soils (F19) (MLRA 149A)							
V)ark Surfa	ace (S7) (LRR I	P, S, T, U)		Anomalous Bright	t Loamy S	oils (F20) (MLRA 149	9A, 153C, 153D)			
□ F	Restric	tive Layer (if observe	d):								
Т	Гуре:								Hydria Sail Brasant?	Voc. V	No	
	Depth (inc	ches):							Hydric Soil Present?	Yes X	No	
Remar	ks:											
0-4 i	nches co	nsists of a blac	k organic sedin	nent. Hydric	soils present.							

WEILAND DETERMINATION DATA FORM - Atlantic and Gulf Coast	tal Plain Region					
Project/Site: Island Beach State Park city/county: Seaside Park, A	J J OCEAN CO. 11/19/21					
Applicant/Owner: Orsted State: N	Sampling Point: WL-1					
Investigator(s): Steve SeyMour, Deidia Valianh' Section, Township, Range:						
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):	Cvc Slope (%): 0					
Subregion (LRR or MLRA): LRR T Lat: 39,904417 Long: 74, 081						
Soil Map Unit Name: Hooksan Fine Sand, 0-10/0 slope NWI classification: PSSL/38 EZEM 1 Pd						
Are climatic / hydrologic conditions on the site typical for this time of year? Yes						
A A A A A A A A A A A A A A A A A A A	nces" present? Yes X No					
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any	1 1500 COUNTY					
SUMMARY OF FINDINGS - Attach site map showing sampling point locations, trans	sects, important features, etc.					
Hydrophytic Vegetation Present? YesX No Is the Sampled Area	:_X No					
HYDROLOGY						
Wetland Hydrology Indicators: Secondary	Indicators (minimum of two required)					
	e Soil Cracks (B6)					
	ely Vegetated Concave Surface (B8)					
High Water Table (A2) Marl Deposits (B15) (LRR U) Draina	ge Patterns (B10)					
· · · · · · · · · · · · · · · · · · ·	Frim Lines (B16)					
- H 15 (1 16)	eason Water Table (C2)					
P. 10. P. 10. (P. 1)	sh Burrows (C8)					
	tion Visible on Aerial Imagery (C9)					
	orphic Position (D2) N Aquitard (D3)					
	eutral Test (D5)					
	num moss (D8) (LRR T, U)					
Field Observations:						
Surface Water Present? Yes No X Depth (inches):						
Water Table Present? Yes No X Depth (inches):						
(includes capillary linige)	resent? Yes X No					
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:						
Remarks:						
crescent-shaped wetland adjacent to we main madway. There is a 3-5' his of wetland. No outlet-apparently is	st side of h berm west solated.					
	1					

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

Tree Stratum (Plot size: 30	Absolute Dominant Indica	
1. 100 (Plot size:)	% Cover Species? Stat	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2		Total Number of Dominant Species Across All Strata: (B)
5		Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
6		Prevalence Index worksheet:
7		
8		Total % Cover of: Multiply by:
	= Total Cover	OBL species
50% of total cover:	20% of total cover:	
Sapling/Shrub Stratum (Plot size: 15)	CONTRACT IN THE SECOND	FAC species x 3 = & 10
1. Vibunum dentatum	20 Y PA	FACU species x 4 =
2 Vaccinium comm hosum	25 D FAY	UPL species x 5 =
		Column Totals: 155 (A) 380 (B)
3	·	7115
4		Prevalence Index = B/A = 2,45
5		— Hydrophytic Vegetation Indicators:
6		1 - Rapid Test for Hydrophytic Vegetation
7		2 - Dominance Test Is >50%
8		X 3 - Prevalence Index is ≤3.01
	<u>45</u> = Total Cover	Problematic Hydrophytic Vegetation¹ (Explain)
50% of total cover:	20% of total cover:	Troblemane Hydrophyne vogetation (Explain)
Herb Stratum (Plot size:	И.	
1. Phracmites gustralis	50 4 FAC	indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. Onoclea sensibilis	10 N PAC	21.1
		Definitions of Four Vegetation Strata:
3		Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
4		more in diameter at breast height (DBH), regardless of
5		height.
G		Sapling/Shrub - Woody plants, excluding vines, less
7		than 3 in. DBH and greater than 3.28 ft (1 m) tall.
8		Herb - All herbaceous (non-woody) plants, regardless
9.		of size, and woody plants less than 3.28 ft tall.
10		
		Woody vine - All woody vines greater than 3.28 ft in
11,		height.
12	<u>-60</u>	
	60 = Total Cover	7
50% of total cover:	20% of total cover:	<u></u>
Woody Vine Stratum (Plot size:)	n 11 h	
1. Smilax rotunditolia	30 Y F	<u>†C </u>
2.		
3.		
4.		
5		
0	30 = Total Cover	— Hydrophytic Yegetation
		Present? Yes No
50% of total cover:		
Remarks: (If observed, list morphological adaptations bel	ow).	

SOIL

Profile Description: (Describe to the depth		the absence of indicators.)
Depth Matrix (inches) Color (moist) %	Redox Features Color (moist)	Texture Remarks
0"-6" 214 LOYR 100	Oddy (most)	
6"-20" 3/1 104R 100		the Pine silty sand
		1
'Type: C=Concentration, D=Depletion, RM=F	Peduced Matrix MS-Macked Sand Crains	2 contion: DI - Dara Lining M-Motriy
Hydric Soil Indicators: (Applicable to all L		² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Solis ³ :
Histosol (A1)	Polyvalue Below Surface (S8) (LRR S, T, L	10/04
Histic Epipedon (A2)	Thin Dark Surface (S9) (LRR S, T, U)	
Black Histic (A3)	Loamy Mucky Mineral (F1) (LRR O)	2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outside MLRA 150A,B)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19) (LRR P, S, T)
Stratified Layers (A5)	Depleted Matrix (F3)	Anomalous Bright Loamy Soils (F20)
X Organic Bodles (A6) (LRR P, T, U)	Redox Dark Surface (F6)	(MLRA 153B)
5 cm Mucky Mineral (A7) (LRR P, T, U)	Depleted Dark Surface (F7)	Red Parent Material (TF2)
Muck Presence (A8) (LRR U)	Redox Depressions (F8)	Very Shallow Dark Surface (TF12)
1 cm Muck (A9) (LRR P, T)	Marl (F10) (LRR U)	Other (Explain in Remarks)
Depleted Below Dark Surface (A11)	Depleted Ochric (F11) (MLRA 151)	
Thick Dark Surface (A12)	Iron-Manganese Masses (F12) (LRR O, P,	T) ³ Indicators of hydrophytic vegetation and
Coast Prairie Redox (A16) (MLRA 150A)		wetland hydrology must be present,
Sandy Mucky Mineral (S1) (LRR O, S)	Delta Ochric (F17) (MLRA 151)	unless disturbed or problematic.
Sandy Gleyed Matrix (S4)	Reduced Vertic (F18) (MLRA 150A, 150B)	
Sandy Redox (S5) Stripped Matrix (S6)	Piedmont Floodplain Soils (F19) (MLRA 14	·
X Stripped Matrix (S6)	Anomalous Bright Loamy Soils (F20) (MLR.	A 440A 453C 463D\
TOTAL STATE OF THE PROPERTY OF	/ ## 200 Only 11 200 (# 20) (## 210	n 148n, 1880, 1880)
Dark Surface (S7) (LRR P, S, T, U)		1 1430, 1330, 1330)
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed):		1430, 1330,
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type:	- hone	V
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches):		Hydric Soll Present? Yes X No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches): Remarks:	- hone	V
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches): Remarks:	- hone	Hydric Soll Present? Yes X No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches): Remarks:	- hone	Hydric Soll Present? Yes X No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches): Remarks:	- hone	Hydric Soll Present? Yes X No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches): Remarks:	- hone	Hydric Soll Present? Yes X No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches): Remarks:	- hone	Hydric Soll Present? Yes X No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches): Remarks:	- hone	Hydric Soll Present? Yes X No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches): Remarks:	- hone	Hydric Soll Present? Yes X No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches): Remarks:	- hone	Hydric Soll Present? Yes X No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches): Remarks:	- hone	Hydric Soll Present? Yes X No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches): Remarks:	- hone	Hydric Soll Present? Yes X No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches): Remarks:	- hone	Hydric Soll Present? Yes X No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches): Remarks:	- hone	Hydric Soll Present? Yes X No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches): Remarks:	- hone	Hydric Soll Present? Yes X No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches): Remarks:	- hone	Hydric Soll Present? Yes X No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches): Remarks:	- hone	Hydric Soll Present? Yes X No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches): Remarks:	- hone	Hydric Soll Present? Yes X No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches): Remarks:	- hone	Hydric Soll Present? Yes X No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches): Remarks:	- hone	Hydric Soll Present? Yes X No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches): Remarks:	- hone	Hydric Soll Present? Yes X No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches): Remarks:	- hone	Hydric Soll Present? Yes X No

WEILAND DETERMINATION DATA FOR	M - Atlantic and Guit Coastal Plain Region					
Project/Site: Island Beach State Park City/o	County: Stasile Purk, Ocan Sampling Date: 11 19/21					
Applicant/Owner: State: NJ Sampling Point: OPL-1						
Investigator(s): Stophen Salmour Deidra Vallanti Section, Township, Range:						
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): CONCAVE Slope (%):						
Subregion (LRR or MLRA): LRR T Lat: 39,904417 Long: 74,081667 Datum:						
Soil Map Unit Name: Hookson Fine Sand, 0-1070 slope NWI classification: PSS1/38: EQEM 1 Vd Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)						
Are Vegetation, Soil, or Hydrology significantly distur	V					
Are Vegetation, Soil, or Hydrology significantly disturbed? Are Normal Circumstances present? Yes No Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)						
SUMMARY OF FINDINGS - Attach site map showing san	npling point locations, transects, important features, etc.					
Hydrophytic Vegetation Present? Hydric Soil Present? Welland Hydrology Present? Yes No X No X No X No X	Is the Sampled Area within a Wetland? Yes No					
Remarks:						
	•					
LIVERSIAN						
HYDROLOGY						
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)					
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)					
Surface Water (A1) Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)					
High Water Table (A2) Marl Deposits (B15) (LRI						
Saturation (A3) Hydrogen Sulfide Odor (6	_ , ,					
Water Marks (B1) Oxidized Rhizospheres a						
Sediment Deposits (B2) Presence of Reduced Iro						
Drift Deposits (B3) Recent Iron Reduction in						
Algal Mat or Crust (B4) Thin Muck Surface (C7) Iron Deposits (B5) Other (Explain in Remark	, , ,					
Inundation Visible on Aerial Imagery (B7)	FAC-Neutral Test (D5)					
Water-Stained Leaves (B9)	Sphagnum moss (D8) (LRR T, U)					
Field Observations:	Spiragrout moss (Do) (ERR 1, 0)					
Surface Water Present? Yes No _X Depth (inches):						
Water Table Present? Yes No X Depth (inches):						
Saturation Present? Yes No X Depth (inches):	Wetland Hydrology Present? Yes No X					
(includes capillary fringe)	Wetland hydrology Present? Tes No _/_					
Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre	pvious inspections), if available:					
Remarks:						
	1					
	'					
	1					
	1					

ee Stratum (Plot size:30)	% Cover	Dominant Species?	Status	Dominance Test worksheet: Number of Dominant Species
Juniperus Viginiana	60_	<u>Y</u> _	FACU	That Are OBL, FACW, or FAC:
				Total Number of Dominant Species Across All Strata:
				Percent of Dominant Species
				That Are OBL, FACW, or FAC:
				Prevalence Index worksheet: Total % Cover of: Multiply by:
	60	Total Cov		OBL species x 1 =
50% of total cover:				FACW species x 2 = FAC species X 3 = 3 0
oling/Shrub Stratum (Plot size:)		10	A 1 1	
Mywica pensylvanica	30	<u>Y</u> _	111	FACU species x4 =240 UPL species x5 =
				Column Totals: 10 (A) 270
				Prevalence Index = B/A = 3.86
				Hydrophytic Vegetation Indicators:
				1 - Rapid Test for Hydrophytic Vegetation
				2 - Dominance Test is >50%
	30			3 - Prevalence Index is ≤3.01
50% of total cover:				Problematic Hydrophytic Vegetation¹ (Explain)
b Stratum (Plot size:)				Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Definitions of Four Vegetation Strata:
N X N N N N N N N N N N N N N N N N N N				Tree – Woody plants, excluding vines, 3 in. (7.6 cm
				more in diameter at breast height (DBH), regardless height.
				Sapling/Shrub - Woody plants, excluding vines, le than 3 in. DBH and greater than 3.28 ft (1 m) tall.
				Herb – All herbaceous (non-woody) plants, regardle of size, and woody plants less than 3.28 ft tall.
				Woody vine - All woody vines greater than 3.28 ft height.
	-			T
EDD/ attacked and an entered		= Total Cov		,
50% of total cover: ody Vine Stratum (Plot size:3)	20% of	total cover:		
Smilax rounditolla	10	Ψ_	FAC	5.
				11
	10	 Total Cov	er	Hydrophytic Vegetation
50% of total cover:				Present? Yes No

wettand A
Sampling Point: UPL-1

SOIL

The state of the s	needed to document the indicator or confirm	mis describe of management
Depth Matrix	Redox Features	C 555 - 5405 - 1000 - 100
	Color (moist) % Type Loc2	Texture Remarks
0-4" 3/2 LOYR 100		Pine sandy origine loam
4"-20" 5/2 104R 100		inchium dry sand
1 00 -100 -		MCBIONI BIY SONG
		
Type: C=Concentration, D=Depletion, RM=Re	duced Matrix MS=Masked Sand Grains	² Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators: (Applicable to all LR		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)		
Histic Epipedon (A2)	Polyvalue Below Surface (S8) (LRR S, T, U	
· · · · · ·	Thin Dark Surface (S9) (LRR S, T, U)	2 cm Muck (A10) (LRR S)
Black Histle (A3)	Loamy Mucky Mineral (F1) (LRR O)	Reduced Vertic (F18) (outside MLRA 150A,B)
Hydrogen Sulfide (A4) Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Pledmont Floodplain Soils (F19) (LRR P, S, T)
Stratified Layers (A5)	Depleted Matrix (F3)	Anomalous Bright Loamy Soils (F20)
Organic Bodies (A6) (LRR P, T, U)	Redox Dark Surface (F6)	(MLRA 153B)
5 cm Mucky Mineral (A7) (LRR P, T, U) Muck Presence (A8) (LRR U)	Depleted Dark Surface (F7)	Red Parent Material (TF2)
1 cm Muck (A9) (LRR b)	Redox Depressions (F8) Mari (F10) (LRR U)	Very Shallow Dark Surface (TF12)
Ten Muck (A9) (ERR P, T) Depleted Below Dark Surface (A11)	Man (F10) (LRR 0) Depleted Ochric (F11) (MLRA 151)	Other (Explain in Remarks)
Depleted Below Dark Surface (A11)		T) 3Indicators of hydrophytic vacatation and
Coast Prairie Redox (A16) (MLRA 150A)	<pre> Iron-Manganese Masses (F12) (LRR O, P, ` Umbric Surface (F13) (LRR P, T, U)</pre>	T) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present,
Sandy Mucky Mineral (S1) (LRR O, S)	Delta Ochric (F17) (MLRA 151)	unless disturbed or problematic.
Sandy Gleyed Matrix (S4)	Reduced Vertic (F18) (MLRA 150A, 150B)	diffess distribed of problematic.
Sandy Gleyed Matrix (34)	Piedmont Floodplain Soils (F19) (MLRA 145	24)
Stripped Matrix (S6)	Anomalous Bright Loamy Soils (F20) (MLRA	
I =	Anomalous Bright Loamy Cons (1 20) (MEN)	1487, 1330, 1330)
I Dark Surface (S7) (LRR P. S. T. U)		
Dark Surface (S7) (LRR P, S, T, U) Restrictive Laver (if observed):		
Restrictive Layer (if observed):	h-n-	
Restrictive Layer (if observed); Type:	- hone	A Market Coll Processed Viscon No. X
Restrictive Layer (if observed): Type: Depth (inches):	hone	Hydric Sall Present? Yes No_X_
Restrictive Layer (if observed); Type:	hone	Hydric Sall Present? Yes No _X
Restrictive Layer (if observed): Type: Depth (inches):	hone	Hydric Sall Present? Yes NoX
Restrictive Layer (if observed): Type: Depth (inches):	hone	Hydric Sall Present? Yes NoX
Restrictive Layer (if observed): Type: Depth (inches):	hone	Hydric Sall Present? Yes NoX
Restrictive Layer (if observed): Type: Depth (inches):	hone	Hydric Sall Present? Yes NoX
Restrictive Layer (if observed): Type: Depth (inches):	hone	Hydric Sall Present? Yes NoX
Restrictive Layer (if observed): Type: Depth (inches):	hone	Hydric Sall Present? Yes NoX
Restrictive Layer (if observed): Type: Depth (inches):	hone	Hydric Soll Present? Yes No X
Restrictive Layer (if observed): Type: Depth (inches):	hone	Hydric Soll Present? Yes No X
Restrictive Layer (if observed): Type: Depth (inches):	hone	Hydric Sall Present? Yes No _X
Restrictive Layer (if observed): Type: Depth (inches):	hone	Hydric Sall Present? Yes No X
Restrictive Layer (if observed): Type: Depth (inches):	hone	Hydric Sall Present? Yes No_X
Restrictive Layer (if observed): Type: Depth (inches):	hone	Hydric Sall Present? Yes NoX
Restrictive Layer (if observed): Type: Depth (inches):	hone	Hydric Sall Present? Yes NoX
Restrictive Layer (if observed): Type: Depth (inches):	hone	Hydric Sall Present? Yes No_X
Restrictive Layer (if observed): Type: Depth (inches):	hone	Hydric Sall Present? Yes No_X
Restrictive Layer (if observed): Type: Depth (inches):	hone	Hydric Sall Present? Yes No_X
Restrictive Layer (if observed): Type: Depth (inches):	hone	Hydric Sall Present? Yes No_X
Restrictive Layer (if observed): Type: Depth (inches):	hone	Hydric Sall Present? Yes NoX
Restrictive Layer (if observed): Type: Depth (inches):	hone	Hydric Sall Present? Yes NoX
Restrictive Layer (if observed): Type: Depth (inches):	hone	Hydric Sall Present? Yes NoX
Restrictive Layer (if observed): Type: Depth (inches):	hone	Hydric Sall Present? Yes NoX
Restrictive Layer (if observed): Type: Depth (inches):	hone	Hydric Sall Present? Yes No X
Restrictive Layer (if observed): Type: Depth (inches):	hone	Hydric Sall Present? Yes No X

Wetland B

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region
Project/Site: Island Beach State Park city/county: Scaside Park/Occan Sampling Date: 11/19/21
Applicant/Owner: State:
Investigator(s): Steve Stymour, heidia Valiant Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): CYC Slope (%): O
Subregion (LRR or MLRA):
Soil Map Unit Name: Hockson Tine Sand, 0-1090 slupe NWI classification: PSS 1/3 B, EZEM 1
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _X (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly disturbed?
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.
Comment of The Indo - Attach site map showing sampling point locations, transects, important leatures, etc.
Hydrophytic Vegetation Present? Hydric Soll Present? Yes X No
WeHand B
HYDROLOGY
Wetland Hydrology Indicators: Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) Surface Soil Cracks (B6)
Surface Water (A1) Aquatic Fauna (B13) Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Mart Deposits (B15) (LRR U) Drainage Patterns (B10)
Saturation (A3) Hydrogen Sulfide Odor (C1) Moss Trim Lines (B16)
Water Marks (B1) Oxidized Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2)
Sediment Deposits (B2) Presence of Reduced Iron (C4) Crayfish Burrows (C8)
Drift Deposits (B3) Recent Iron Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)
Iron Deposits (B5) Other (Explain in Remarks) Shallow Aquitard (D3)
fnundation Visible on Aerial Imagery (B7) FAC-Neutral Test (D5)
Water-Stained Leaves (B9) Sphagnum moss (D8) (LRR T, U)
Field Observations:
Surface Water Present? Yes NoX Depth (inches):
Water Table Present? Yes A No Depth (inches): 10
Saturation Present? Yes X No Depth (inches): 10" Wetland Hydrology Present? Yes X No (includes capillary fringe)
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Remarks:
wetland area west of main roadway. Surrounds the sturaget
laydown area. Portions close to upland edge have attite
catherer, grades off into reed monocylture. Westerly edge
wetland area west of main roadway. Surrounds the storaget laydown area. Portions close to upland edge have dense catherier, grades off into reed monoculture. Westerly edge opens up to bay. hense common reed 10-12 ft high right to the waterline.
125.
2

/EGETATION	Four Strata) – Use scientific	names of plants.
A FOR IVITOR	Tour Suala	<i>)</i> — 036 306116110	Harries of plants.

ampling Point: WB WET

Tree Stratum (Plot size: 30	Absolute	Dominant	Indicator	Dominance Test worksheet:
	% Cover	Species?		Number of Dominant Species
1. Duniperus virginiana	20	<u> </u>	FACU	That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata:
4,				575
5				Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
6.				THAT A G OBL, PACW, OF PAC. (AVB)
7.				Prevalence Index worksheet:
				Total % Cover of: Multiply by:
8	20	= Total Cov		OBL species x 1 =
				FACW species 60 x 2 = 120
50% of total cover:	20% of	total cover	:	FAC species 25 x3 = 75
Sapling/Shrub Stratum (Plot size: 15)	15	13	DAAL)	FACU species 20 x4= 80
1. Vaccinium corymbosum		<u> </u>	TILL	
2				UPL species
3				Column Totals: 105 (A) 275 (B)
4				Prevalence Index = B/A = 2.62
5				
6				Hydrophytic Vegetation Indicators:
				1 - Rapid Test for Hydrophytic Vegetation
7				2 - Dominance Test is >50%
8	TE			X 3 - Prevalence Index is ≤3.01
VPACAR		= Total Cov	/er	Problematic Hydrophytic Vegetation¹ (Explain)
50% of total cover;	20% of	total cover		
Herb Stratum (Plot size:	214	15	F0 4.1	Indicators of hydric soil and wetland hydrology must
1. Phraemites australis	40	<u> </u>	TIVW	be present, unless disturbed or problematic.
2. Onocta sensibilis	_5_	N	FACW	Definitions of Four Vegetation Strata:
3	7)			
4.				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
5				height.
6				Sapting/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
7				trail 5 iii. DBH and greater than 5.20 it (1 iii) taii.
8				Herb - All herbaceous (non-woody) plants, regardless
9				of size, and woody plants less than 3.28 ft tall.
10				Woody vine – All woody vines greater than 3.28 ft in
11.				height.
12				
	45	= Total Cov	/ег	
50% of total cover;		total cover		
Woody Vine Stratum (Plot size: 30)				
1. Smilax rolindifolice	25	γ	FAC	
2			11.0	
2.				
3				
4				
5	1 <u></u> 1			Hydrophytic
	<u> 25</u> :	= Total Cov	/er	Vegetation Present? Yes No
50% of total cover:	20% of	total cover	:	Present? Yes No
Remarks: (If observed, list morphological adaptations belo	w).			

Profile Desc	cription: (Describe t	o the depth	needed to docu	nent the I	ndlcator	or confirm	the absence of	of Indicate	ors.)	
Depth	Matrix			x Features		1 -2	Tt		5	
0 - 4"	Color (moist)	%	Color (moist)		Type'	Loc ²	Texture		Remarks	
	7/1 / 0/10	100								
4"-190"	6/L 104R	100 _								
										•

	oncentration, D=Depl					ains.			ining, M=Matr	
1	ndicators: (Applica	ble to all LR						or Proble	matic Hydric	Solls ³ :
Histosol			Polyvalue Be							
	olpedon (A2)		Thin Dark St					uck (A10)		
- Black His	siic (A3) n Sulfide (A4)	•	Loamy Muck Loamy Gleye			(0)				MLRA 150A,B)
	I Layers (A5)	•	Depleted Ma		F2)				ain Soils (F19) Loamy Soils ((LRR P, S, T)
_	Bodies (A6) (LRR P,	T, U)	Redox Dark	, ,	6)			A 153B)	. Louiny dons (. 20)
	cky Mineral (A7) (LR		Depleted Da	-	-		•	rent Mater	rial (TF2)	
	esence (A8) (LRR U)		Redox Depre	essions (F8			_		k Surface (TF1	12)
	ck (A9) (LRR P, T)		Mari (F10) (L				Other (i	Explain in	Remarks)	
	Below Dark Surface	(A11)	Depleted Oc			•	g			
	irk Surface (A12) airle Redox (A16) (M	I DA 4608\	Iron-Mangan						drophytic vege logy must be p	
	lucky Mineral (S1) (Li		Umbric Surfa Delta Ochric			, 0)		•	ogy must be p ed or problema	· '
	leyed Matrix (S4)		Reduced Ve		-	OA. 150B)	dille	33 013(01)	ad or problems	ilio.
	edox (S5)		Piedmont Flo				9A)			
	Matrix (S6)		Anomalous E	Bright Loan	ny Soils (F20) (MLR/	A 149A, 153C,	153D)		
	face (S7) (LRR P, S,	T, U)								
_	.ayer (If observed):									
Type:	h>:		→):							
	:hes):		==				Hydric Soll F	Present?	Yes	No
Remarks:										
										1

Wetland B

WETLAND DETERMINATION DATA FORM	M – Atlantic and Gulf Coastal Plain Region
A- 1	county: Staside Red Ocean Sampling Date: 11/19/2
Applicant/Owner: Orsicd	State: NJ Sampling Point: WLB-UP
Investigator(s): Stere Seymour, heldia Valinsectio	on, Township, Range:
	relief (concave, convex, none): NONC Slope (%):
	11117 711 001 667
Soil Map Unit Name: Houlson Fine Sand, 0 - 10/0 s(u) Are climatic / hydrologic conditions on the site typical for this time of year? You	
Are Vegetation, Soil, or Hydrology significantly disturb	bed? Are "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, or Hydrology naturally problema	
SUMMARY OF FINDINGS - Attach site map showing sam	pling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Hydric Soll Present? Welland Hydrology Present? Remarks:	is the Sampled Area within a Wetland? Yes No
Wetland B	9 /
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Marl Deposits (B15) (LRR	
Saturation (A3) Hydrogen Sulfide Odor (C	· · · · · · · · · · · · · · · · · · ·
Water Marks (B1) Oxidized Rhizospheres al	long Living Roots (C3) Dry-Season Water Table (C2)
Sediment Deposits (B2) Presence of Reduced Iron	n (C4) Crayfish Burrows (C8)
Drift Deposits (B3) Recent Iron Reduction in	Tilled Soils (C6) Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Thin Muck Surface (C7)	Geomorphic Position (D2)
Iron Deposits (B5) Other (Explain in Remark:	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	FAC-Neutral Test (D5)
Water-Stained Leaves (B9)	Sphagnum moss (D8) (LRR T, U)
Field Observations;	
Surface Water Present? Yes No X Depth (inches):	
Water Table Present? Yes No X Depth (inches):	
Saturation Present? Yes No X Depth (inches):	Wetland Hydrology Present? Yes No X
Describe Recorded Data (stream gauge, monitoring well, aerial photos, prev	vious inspections), if available:
Consider	
Remarks:	

VEGETATION (Fo	ur Strata) – Use	scientific names	of plants
VECEINIDIT (1 V	ui Otiutu) — Osc	Solchuno Harries	o o olalita

Sampling Point: WB - UPL

Tree Stratum (Plot size: 30	Absolute	Dominan	t Indicator	Dominance Test worksheet:
		Species	2 Status	Number of Dominant Species
1. Juniperus virginiana	_60_	· <u> </u>	FRCU	That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata: (B)
4				72
5		-		Percent of Dominant Species
1				That Are OBL, FACW, or FAC: (A/B)
6				Prevalence Index worksheet:
7		-		Total % Cover of:Multiply by:
8	- (2			OBL species x 1 =
	60	= Total Co	ver	FACW species 20 x2 = 40
50% of total cover:	20% of	f total cove	r:	
Sapling/Shrub Stratum (Plot size:)		13	_	FAC species x3 =
1. Myrica pensy luante	20	Υ	NI	FACU species
1 2 10 10				UPL species x 5 =
				Column Totals: 90 (A) 320 (B)
3				=5747
4				Prevalence Index = B/A = 3,56
5				Hydrophytic Vegetation Indicators:
6		-		1 - Rapid Test for Hydrophytic Vegetation
7				2 - Dominance Test is >50%
8				I —-
***************************************	20	= Total Co		3 - Prevalence Index is ≤3.01
5004 -44-4-1				Problematic Hydrophytic Vegetation¹ (Explain)
50% of total cover:	20% or	rtotal cove	r:	
Herb Stratum (Plot size:	71.6	1)	[A Aid	Indicators of hydric soil and wetland hydrology must
1. Phragmites australis	20	<u> </u>	FACW	be present, unless disturbed or problematic.
21				Definitions of Four Vegetation Strata:
3				
4				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
		-	. ——	height.
5			. —	113.3.11
6		-		Sapling/Shrub - Woody plants, excluding vines, less
7		,		than 3 in. DBH and greater than 3.28 ft (1 m) tall.
8				Herb - All herbaceous (non-woody) plants, regardless
9				of size, and woody plants less than 3.28 ft tall.
10.				
		-		Woody vine - All woody vines greater than 3.28 ft in
11.				height.
12	75			7 3
	<u> 20</u>	= Total Co	ver	
50% of total cover:	20% of	ftotal cove	r:	
Woody Vine Stratum (Plot size:)	4 .	1.2		
1 Darthenocissus avincuellia	10	Y	FAM	
2.				
2			:	
3		-		
4			. ——	
5	· ——			Hydrophytic
	10	= Total Co	ver	Vegetation
50% of total cover:	20% of	total cove	r:	Present? Yes No
Remarks: (If observed, list morphological adaptations belo				
residents. (II observed, not morphological adaptations both	J#).			

Sampling Point: WLB - UPL

Profile Description: (Describe to the dep	in needed to document the indicator or confirm	the absolice of indicators.
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type¹ Loc²	Texture Remarks
6"-3" 3/2 104R 100		sandy organic loam
3"-20" 5/2 104R 100		sand
3 00 30 10 17 10		
		
		W - 1975
		· · · · · · · · · · · · · · · · · · ·
1Type: C=Concentration D=Depletion RM	=Reduced Matrix, MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators: (Applicable to all		Indicators for Problematic Hydric Solis ³ :
	·	
Histosol (A1) Histic Epipedon (A2)	Polyvalue Below Surface (S8) (LRR S, T, U	
	Thin Dark Surface (S9) (LRR S, T, U)	2 cm Muck (A10) (LRR S)
Black Histic (A3)	Loamy Mucky Mineral (F1) (LRR O)	Reduced Vertic (F18) (outside MLRA 150A,B)
	Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19) (LRR P, S, T)
Stratified Layers (A5) Organic Bodies (A6) (LRR P, T, U)	Depleted Matrix (F3)	Anomalous Bright Loamy Soils (F20)
5 cm Mucky Mineral (A7) (LRR P, T, U)	Redox Dark Surface (F6)	(MLRA 153B) Red Parent Material (TE2)
Sum Mucky Milneral (A7) (LRR P, 1, 0) Muck Presence (A8) (LRR U)	Depleted Dark Surface (F7) Redox Depressions (F8)	Red Parent Material (TF2)
1 cm Muck (A9) (LRR P, T)	Redox Depressions (F8) Mari (F10) (LRR U)	Very Shallow Dark Surface (TF12)
Depleted Below Dark Surface (A11)	Man (F10) (ERR 0) Depleted Ochric (F11) (MLRA 151)	Other (Explain in Remarks)
Thick Dark Surface (A12)	Iron-Manganese Masses (F12) (LRR O, P,	T) ³ Indicators of hydrophytic vegetation and
Coast Prairie Redox (A16) (MLRA 150)		wetland hydrology must be present,
Sandy Mucky Mineral (S1) (LRR O, S)	Deita Ochric (F17) (MLRA 151)	unless disturbed or problematic.
Sandy Gleyed Matrix (S4)	Reduced Vertic (F18) (MLRA 150A, 150B)	amoss distalled of problematic.
Sandy Redox (S5)	Piedmont Floodplain Solls (F19) (MLRA 149	AA)
Stripped Matrix (S6)	Anomalous Bright Loamy Soils (F20) (MLR/	
		1 1407, 1000, 1000,
Dark Surface (S7) (LRR P. S. T. U)		
Dark Surface (S7) (LRR P, S, T, U) Restrictive Laver (If observed):		
Restrictive Layer (if observed):	hone i	
Restrictive Layer (if observed): Type:	- hone	Muddle Sell Bresserts - Ves - No X
Restrictive Layer (if observed): Type: Depth (inches):	- hone d	Hydric Soll Present? Yes No
Restrictive Layer (if observed): Type:	- hone d	Hydric Soil Present? Yes No
Restrictive Layer (if observed): Type: Depth (inches):	- hone d	Hydric Soil Present? Yes No X
Restrictive Layer (if observed): Type: Depth (inches):	- hone d	Hydric Soil Present? Yes No
Restrictive Layer (if observed): Type: Depth (inches):	- hone d	Hydric Soil Present? Yes No X
Restrictive Layer (if observed): Type: Depth (inches):	- hone d	Hydric Soil Present? Yes No X
Restrictive Layer (if observed): Type: Depth (inches):	- hone d	Hydric Soil Present? Yes No X
Restrictive Layer (if observed): Type: Depth (inches):	- hone d	Hydric Sall Present? Yes No
Restrictive Layer (if observed): Type: Depth (inches):	- hone d	Hydric Sall Present? Yes No
Restrictive Layer (if observed): Type: Depth (inches):	- hone d	Hydric Sall Present? Yes No
Restrictive Layer (if observed): Type: Depth (inches):	- hone d	Hydric Sall Present? Yes No
Restrictive Layer (if observed): Type: Depth (inches):	- hone d	Hydric Sall Present? Yes No
Restrictive Layer (if observed): Type: Depth (inches):	- hone d	Hydric Sall Present? Yes No
Restrictive Layer (if observed): Type: Depth (inches):	- hone d	Hydric Sall Present? Yes No X
Restrictive Layer (if observed): Type: Depth (inches):	- hone do not be a conserved	Hydric Sall Present? Yes No
Restrictive Layer (if observed): Type: Depth (inches):	- hone dobserved	Hydric Soil Present? Yes No X
Restrictive Layer (if observed): Type: Depth (inches):	- hone dobserved	Hydric Soil Present? Yes No X
Restrictive Layer (if observed): Type: Depth (inches):	- hone observed	Hydric Soil Present? Yes No X
Restrictive Layer (if observed): Type: Depth (inches):	- hone observed	Hydric Soil Present? Yes No
Restrictive Layer (if observed): Type: Depth (inches):	- hone observed	Hydric Soil Present? Yes No
Restrictive Layer (if observed): Type: Depth (inches):	- hone observed	Hydric Soil Present? Yes No
Restrictive Layer (if observed): Type: Depth (inches):	- hone observed	Hydric Soil Present? Yes No
Restrictive Layer (if observed): Type: Depth (inches):	- hone observed	Hydric Soil Present? Yes No X
Restrictive Layer (if observed): Type: Depth (inches):	- hone observed	Hydric Soil Present? Yes No X
Restrictive Layer (if observed): Type: Depth (inches):	- hone observed	Hydric Soil Present? Yes No X
Restrictive Layer (if observed): Type: Depth (inches):	- hone observed	Hydric Soil Present? Yes No X

WeHand C

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region
Project/Site: Island Brach State Park city/County: Seaside Park, Ocan Sampling Date: 11/19/21
Applicant/Owner: Orsica State: NJ Sampling Point: WLC - WE
Investigator(s): Steve Sey Mour, Deld in Vallanti Section, Township, Range:
Landform (hillslope, terrace, etc.): CvC Local relief (concave, convex, none): CvC Slope (%):
Subregion (LRR or MLRA): LRR T Lat: 39,85253 L Long: 74,088430 Patum:
Soil Map Unit Name: Hooksan Fine Sand, 0-1070 slope NWI classification: PSS1/3B, EZEM1
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly disturbed?
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Yes No
We Hand C - north of access mad to maintenance
area on west side of main road.
HYDROLOGY
Wetland Hydrology Indicators: Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) Surface Soil Cracks (B6)
Surface Water (A1) Aquatic Fauna (B13) Sparsely Vegetated Concave Surface (B8)
X High Water Table (A2)
X Saturation (A3) Hydrogen Sulfide Odor (C1) Moss Trim Lines (B16)
Water Marks (B1) Oxidized Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2)
Sediment Deposits (B2) Presence of Reduced Iron (C4) Crayfish Burrows (C8)
Craylish Bahows (CS) Drift Deposits (B3) Recent Iron Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Thin Muck Surface (C7) Geomorphic Position (D2)
Iron Deposits (B5)
Inundation Visible on Aerial Imagery (B7) FAC-Neutral Test (D5)
Water-Stained Leaves (B9) Sphagnum moss (D8) (LRR T, U)
Field Observations:
Surface Water Present? Yes No _X Depth (Inches):
Water Table Present? Yes X No Depth (inches): 7 BGS
Saturation Present? Yes X No Depth (inches): 105-116-116 Wetland Hydrology Present? Yes X No
(includes capillary fringe)
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Remarks:
Tronwing.

Wetland C

VEGETATION (Four Strata) - Use scientific na	mes of pl	ants.		Sampling Point: WCC -
Tree Stratum (Plot size: 30)		Dominant		Dominance Test worksheet:
11	% Cover	Species?	Status	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strate: (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: (A/B)
6				Prevalence Index worksheet:
7,				Total % Cover of: Multiply by:
8	d	= Total Cov		OBL species x 1 =
50% of total cover:	7	total cover		FACW species x 2 =
Sapling/Shrub Stratum (Plot size:15)		.)		FAC species <u>20</u> x 3 = <u>60</u>
1 Vaccinium Corymhosum	20	$-\varphi$	FACW	FACU species x 4 =
2.			· ·	UPL species x 5 =
3.				Column Totals: 130 (A) 280 (B)
4				Prevalence Index = B/A =
5				Hydrophytic Vegetation Indicators:
6				1 - Rapid Test for Hydrophytic Vegetation
7				2 - Dominance Test is >50%
8				X 3 - Prevalence Index is ≤3.01
023300	20			Problematic Hydrophytic Vegetation¹ (Explain)
50% of total cover:	20% of	total cover	:	
1. MYacmites australis	90	Υ	FACW	Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2				Definitions of Four Vegetation Strata:
3				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
4				more in diameter at breast height (DBH), regardless of
5				helght.
6				Sapiling/Shrub - Woody plants, excluding vines, less
7				than 3 in. DBH and greater than 3.28 ft (1 m) tall.
8				Herb - All herbaceous (non-woody) plants, regardless
9				of size, and woody plants less than 3.28 ft tall.
10				Woody vine - All woody vines greater than 3.28 ft in
11 12.			•	height.
(2)	90	= Total Cov	er er	
50% of total cover:		total cover		
Woody Vine Stratum (Plot size:30		.)		
1 Smilax rotunditolia	20	$\underline{\qquad}$	FAC	
2				
3				
4				
5	30			Hydrophytic
		= Total Cov		Vegetation
50% of total cover:		total cover	:	100
Remarks: (If observed, list morphological adaptations below	ow).			

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Sampling Point: WET

SOIL

Profile Description: (Describe to the dept	h needed to document the Indicator or confirm	the absence of Indicators.)
DepthMatrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type¹ Loc²	Texture Remarks
0'00'-0'08" 2 2 104R 100		The peaty subvoted loam
18"-20" 4/1 104R 100		medium silfy sand
		2
		
terms at the second second	Service Address And Address An	2
Type: C=Concentration, D=Depletion, RM=		² Location: PL=Pore Lining, M=Matrix.
Hydric Soll indicators: (Applicable to all i	·	Indicators for Problematic Hydric Solis ³ :
Histosol (A1)	Polyvalue Below Surface (S8) (LRR S, T, L	
Histic Eplpedon (A2)	Thin Dark Surface (S9) (LRR S, T, U)	2 cm Muck (A10) (LRR S)
Black Histic (A3)	Loamy Mucky Mineral (F1) (LRR O)	Reduced Vertic (F18) (outside MLRA 150A,B)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19) (LRR P, S, T)
Stratified Layers (A5) Organic Bodles (A6) (LRR P. T. U)	Depleted Matrix (F3)	Anomalous Bright Loamy Solls (F20)
5 cm Mucky Mineral (A7) (LRR P, T, U)	Redox Dark Surface (F6) Depleted Dark Surface (F7)	(MLRA 153B) Red Parent Material (TF2)
Muck Presence (A8) (LRR U)	Redox Depressions (F8)	Very Shallow Dark Surface (TF12)
1 cm Muck (A9) (LRR P, T)	Mari (F10) (LRR U)	Other (Explain In Remarks)
Depleted Below Dark Surface (A11)	Depleted Ochric (F11) (MLRA 151)	Other (Explain in Normalics)
Thick Dark Surface (A12)	Iron-Manganese Masses (F12) (LRR O, P,	T) ³ Indicators of hydrophytic vegetation and
Coast Prairie Redox (A16) (MLRA 150A		wetland hydrology must be present,
Sandy Mucky Mineral (S1) (LRR O, S)	Delta Ochric (F17) (MLRA 151)	unless disturbed or problematic.
Sandy Gleyed Matrix (S4)	Reduced Vertic (F18) (MLRA 150A, 150B)	
Sandy Redox (S5)	Piedmont Floodplain Solls (F19) (MLRA 14	
X Stripped Matrix (S6)	Anomalous Bright Loamy Soils (F20) (MLR	A 149A, 153C, 153D)
Dark Surface (S7) (LRR P, S, T, U)		
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed):	NINE	
	NONE	
Restrictive Layer (if observed):	NONE OBSERVED	Hydric Soll Present? Yes No
Restrictive Layer (if observed): Type: Depth (inches):	OBSERVED	
Restrictive Layer (if observed): Type: Depth (inches):	OBSERVED	
Restrictive Layer (if observed): Type: Depth (inches):	OBSERVED	
Restrictive Layer (if observed): Type: Depth (inches):	OBSERVED	
Restrictive Layer (if observed): Type: Depth (inches):	OBSERVED	
Restrictive Layer (if observed): Type: Depth (inches):	OBSERVED	
Restrictive Layer (if observed): Type: Depth (inches):	NONE RUED s rhizomes, plant s.	
Restrictive Layer (if observed): Type: Depth (inches):	OBSERVED	
Restrictive Layer (if observed): Type: Depth (inches):	OBSERVED	
Restrictive Layer (if observed): Type: Depth (inches):	OBSERVED	
Restrictive Layer (if observed): Type: Depth (inches):	OBSERVED	
Restrictive Layer (if observed): Type: Depth (inches):	OBSERVED	
Restrictive Layer (if observed): Type: Depth (inches):	OBSERVED	
Restrictive Layer (if observed): Type: Depth (inches):	OBSERVED	
Restrictive Layer (if observed): Type: Depth (inches):	OBSERVED	
Restrictive Layer (if observed): Type: Depth (inches):	OBSERVED	
Restrictive Layer (if observed): Type: Depth (inches):	OBSERVED	
Restrictive Layer (if observed): Type: Depth (inches):	OBSERVED	
Restrictive Layer (if observed): Type: Depth (inches):	OBSERVED	
Restrictive Layer (if observed): Type: Depth (inches):	OBSERVED	
Restrictive Layer (if observed): Type: Depth (inches):	OBSERVED	
Restrictive Layer (if observed): Type: Depth (inches):	OBSERVED	
Restrictive Layer (if observed): Type: Depth (inches):	OBSERVED	
Restrictive Layer (if observed): Type: Depth (inches):	OBSERVED	

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Project/Site: Island Brach State Park City/C Applicant/Owner: Orsted Investigator(s): Stre Sey Mour, Deldia Vallanti Section	relief (concave, convex, none): 174 Slope (%): 0 531 Long: 74, 088430 Datum: 5/0) © NWI classification: PSS13B, EQEM1 Pd (es X No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology naturally problems	
SUMMARY OF FINDINGS - Attach site map showing sam	ipling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Remarks:	le the Sampled Area within a Wetland? Yes No
Wettand C-north side	of access mad to maintenance
area on west side of	main roadi
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Aquatic Fauna (B13)	Sparsely Vegetaled Concave Surface (B8)
High Water Table (A2) Marl Deposits (B15) (LRF	
Saturation (A3) Hydrogen Sulfide Odor (C	
Water Marks (B1) Oxidized Rhizospheres a	
Sediment Deposits (B2) Presence of Reduced Iron	
Drift Deposits (B3) Recent Iron Reduction in	Tilled Soils (C6) Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Thin Muck Surface (C7)	Geomorphic Position (D2)
Iron Deposits (B5) Other (Explain in Remark	ss) Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	FAC-Neutral Test (D5)
Water-Stained Leaves (B9)	Sphagnum moss (D8) (LRR T, U)
Field Observations:	
Surface Water Present? Yes No X Depth (inches):	
Water Table Present? Yes No X Depth (inches):	
Saturation Present? Yes No X Depth (inches):	Wetland Hydrology Present? Yes No X
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre-	
Describe Necorded Data (stream gauge, monitoring won, aeriai priotos, pre-	vious inspections), il available.
Remarks:	
remarks.	

Wetland C

Absolute Dominant Indicator	Sampling Point: WCC - Dominance Test worksheet:
% Cover Species? Status	Number of Developed Species
	Total Number of Dominant
	Species Across All Strata:(B)
	Percent of Dominant Species 50
	That Are OBL, FACW, or FAC: (A/B)
	Prevalence Index worksheet:
	Total % Cover of:Multiply by:
	OBL species x 1 =
20% of total cover:	FACW species
10 11 EAA	FAC species 20 x3 = 60 FACU species 20 x4 = 320
1110	UPL species x5=
<u> </u>	Column Totals: 100 (A) 386 (B)
	38
	Lieablide ilidey DAV
	Hydrophytic Vegetation indicators;
	1 - Rapid Test for Hydrophytic Vegetation
	2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹
30 = Total Cover	Problematic Hydrophytic Vegetation¹ (Explain)
20% of total cover:	
	indicators of hydric soil and wetland hydrology must
	be present, unless disturbed or problematic
	Definitions of Four Vegetation Strata:
	Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or
	more in diameter at breast height (DBH), regardless of height.
	Sapting/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3,28 ft (1 m) tall.
	Herb - All herbaceous (non-woody) plants, regardless
	of size, and woody plants less than 3.28 ft tall.
	Woody vine - All woody vines greater than 3.28 ft in
	helght.
	
20% or (otal cover;	
LO Y FAC	1
TO V FACU	
	1
	Hydrophytic
= Total Cover	Vegetation
20% of total cover;	Present? Yes No 🔨
	70

wetland C

sempling Point: <u>WC</u> - UPL

SOIL

Profile Description: (Describe to the dept	h needed to document the Indicator or confirm	the absence of Indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type¹ Loc²	Texture Remarks
0'00'-7 3/2 104R 100		
		syndy organic loam
17"-20" 5'2 LUYR 100		dry sand
· · · · · · · · · · · · · · · · · · ·		
Type: C=Concentration, D=Depletion, RM=	Reduced Matrix, MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix,
Hydric Soil indicators: (Applicable to all i		Indicators for Problematic Hydric Soils ³ :
1	· ·	
Histosol (A1)	Polyvalue Below Surface (S8) (LRR S, T, U	. —
Histic Epipedon (A2)	Thin Dark Surface (S9) (LRR S, T, U)	2 cm Muck (A10) (LRR S)
Black Histic (A3)	Loamy Mucky Mineral (F1) (LRR O)	Reduced Vertic (F18) (outside MLRA 150A,B)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19) (LRR P, S, T)
Stratified Layers (A5)	Depleted Matrix (F3)	Anomalous Bright Loamy Solls (F20)
Organic Bodies (A6) (LRR P, T, U)	Redox Dark Surface (F6)	(MLRA 153B)
5 cm Mucky Mineral (A7) (LRR P, T, U)	Depleted Dark Surface (F7)	Red Parent Material (TF2)
Muck Presence (A8) (LRR U)	Redox Depressions (F8)	Very Shallow Dark Surface (TF12)
		
1 cm Muck (A9) (LRR P, T)	Mari (F10) (LRR U)	Other (Explain in Remarks)
Depleted Below Dark Surface (A11)	Depleted Ochric (F11) (MLRA 151)	2
Thick Dark Surface (A12)	Iron-Manganese Masses (F12) (LRR O, P,	
Coast Prairie Redox (A16) (MLRA 150A		wetland hydrology must be present,
Sandy Mucky Mineral (S1) (LRR O, S)	Delta Ochric (F17) (MLRA 151)	unless disturbed or problematic.
Sandy Gleyed Matrix (S4)	Reduced Vertic (F18) (MLRA 150A, 150B)	
Sandy Redox (S5)	Piedmont Floodplain Soils (F19) (MLRA 149	9A)
Stripped Matrix (S6)	Anomalous Bright Loamy Soils (F20) (MLR/	A 149A, 153C, 153D)
	_ , , , , ,	
Dark Surface (S7) (LRR P, S, T, U)		
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed):	honc 1	
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type:		x
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed):	hone d	Hydric Soli Present? Yes No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type:		Hydric Soli Present? Yes No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches):		Hydric Soli Present? Yes No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches):		Hydric Soli Present? Yes No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches):		Hydric Soli Present? Yes No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches):		Hydric Soli Present? Yes No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches):		Hydric Soli Present? Yes No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches):		Hydric Soli Present? YesNoX
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches):		Hydric Soli Present? Yes No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches):		Hydric Soli Present? Yes No _X
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches):		Hydric Soli Present? Yes No _X
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches):		Hydric Soli Present? Yes No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches):		Hydric Soli Present? Yes No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches):		Hydric Soli Present? Yes No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches):		Hydric Soli Present? Yes NoX
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches):		Hydric Soli Present? Yes NoX
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches):		Hydric Soli Present? Yes NoX
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches):		Hydric Soli Present? Yes No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches):		Hydric Soll Present? Yes No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches):		Hydric Soli Present? Yes No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches):		Hydric Soli Present? Yes No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches):		Hydric Soli Present? Yes NoX
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches):		Hydric Soli Present? Yes NoX
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches):		Hydric Soli Present? Yes No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches):		Hydric Soli Present? YesNoX
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches):		Hydric Soli Present? YesNoX
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches):		Hydric Soli Present? Yes No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches):		Hydric Soli Present? Yes No
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type: Depth (inches):		Hydric Soli Present? Yes No



BL England



Ocean Wind Offshore Wind (OCW01)

Wetland and Watercourse Delineation Report

BL England and Roosevelt Boulevard- Block 1750, Lot 1, Block 3350.01, Lot 17, Block 3350.01, Lot 17.01



Document Version

File Name	Preparer	Editor	Checker	Accepter	Approver
OCW01- BL England Delineation Report_20220111	DV, JC	ALD	KV, DB		



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9	, i	

List of Attachments

Attachment A.	USDA NRCS Web Soil Survey Custom Soil Resource Report
Attachment B.	Site Photographs
Attachment C.	Wetland Limit of Disturbance (LOI) Letter and Plan
Attachment D.	Wetland Plans
Attachment E.	Wetland Delineation Datasheets



1. Project Description

Ocean Wind LLC (Ocean Wind), a subsidiary of Ørsted Wind Power North America LLC (Ørsted) [formerly Dong Energy Wind Power (U.S.) Inc.] is developing the Ocean Wind Offshore Wind Farm Project (OCW01) pursuant to the Bureau of Ocean Energy Management (BOEM) requirements for the commercial lease of submerged lands for renewable energy development on the outer continental shelf (Lease Area OCS-A-0498). Ocean Wind intends to develop, build, operate, and own (through one or more affiliated special purpose entities) a utility-scale offshore wind farm located approximately 15 miles off the coast of New Jersey within the OCS-A 0498 Lease area (Figure 1-1).

As a part of Project development, Ocean Wind is looking to best utilize the available points of interconnection to the onshore grid. A point of interconnection is referred to as "BL England" or "the Project", located on a property owned by RC Cape May Holdings, LLC. The BL England property is located in the Beesley's Point section of Upper Township in the northern portion of Cape May County (Block 479, lot 76) (**Figure 1-1**). A wetland delineation was previously completed in July and August of 2018 by Water's Edge Environmental, LLC and NJDEP issued a Letter of Interpretation (LOI) on March 19, 2019 (LOI File #0511-03-0011.4). The LOI will expire on March 24, 2024 (see **Attachment C**). To support the potential development of the site, a wetland delineation, LOI verification, and habitat assessment were conducted for the eastern portion of the property that includes the golf course, wooded areas along Clay Avenue, and a section of the rail line (**Figure 1-1**) in November 2021. The BL England Wetland Review Area (WRA) consists of the BLE Onshore Substation and Onshore Export Cable Route.

The BL England property is zoned as Utility, Conservation, and Center Residential. As part of the settlement agreement to build the generating station, Upper Township stipulated that the Atlantic Electric Company must provide an area set aside for public recreational purposes. This included the nine-hole golf course and clubhouse, a softball field, a picnic area, and a fishing pier. Currently, the golf course is not operational, and the clubhouse has been demolished. The golf course continues to be maintained by mowing. The BL England generating station was permanently decommissioned on May 1, 2019 (Water's Edge Environmental LLC, 2019).

A wetland delineation and habitat assessment were also conducted within the BLE WRA along Roosevelt Boulevard south of the BL England property in Upper Township and Ocean City, as part of the onshore export cable route (**Figure 1-1**). Both assessments were conducted within the road right-of-way east and west of the Roosevelt Bridge. The wetland delineation east of the Roosevelt Bridge is within Block 3350.01, Lot 17 owned by the City of Ocean and Block 3350.01, Lot 17.01 owned by Cape May County (**Figure 1-1**).



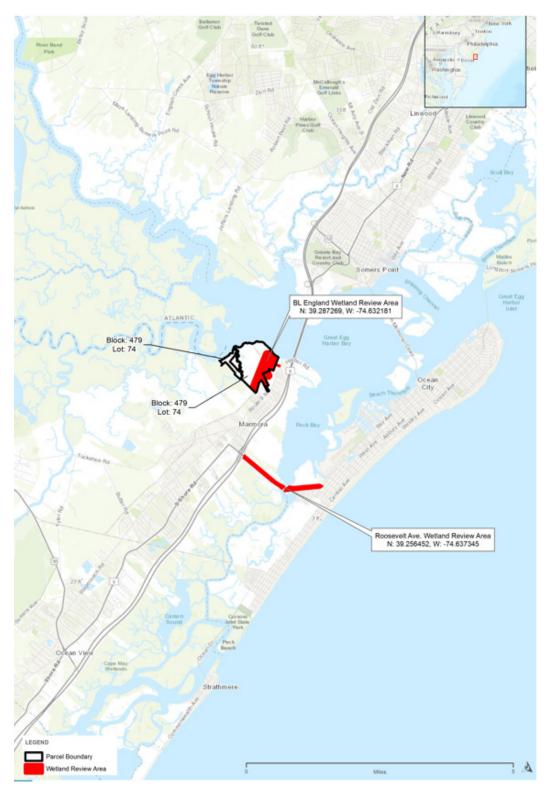


Figure 1-1. Project Overview Figure with WRAs.



2. Methods

HDR Engineering, Inc. (HDR) delineated the boundaries of wetlands and watercourses within the Project Area in two phases, Desktop Review and Field Survey, as described below.

2.1 Desktop Review

Prior to conducting the wetland and watercourse delineation, relevant materials were reviewed, and are included as attachments for reference:

- NJDEP Watershed Management Area Map
- New Jersey State Department of Environmental Protection (NJDEP) Wetlands Map
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Map
- U.S. Department of Agriculture (USDA) Natural Resources Conservation (NRCS) Web Soil Survey (WSS) Custom Soil Resource Report (Attachment A)
- Federal Emergency Management Agency (FEMA) 2013 Preliminary Working Data Flood Insurance Rate Maps (FIRM)

2.2 Field Survey

On September 16 and 17, 2019, and March 21, 2022 the boundaries of the BLE WRA were delineated.

All delineation flag locations were surveyed by a license New Jersey Land Surveyor and additionally recorded using sub-meter accuracy GPS units.

All delineations used the three-parameter methodology described in the 1987 United States Army Corps of Engineers (USACE) wetland delineation manual (Environmental Laboratory 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual, Atlantic and Gulf Coastal Plain Region (USACE 2010). The lines were walked and verified based on the three-parameter approach (soils, vegetation, and hydrology) described in the 1989 Federal Interagency Manual. Upland and wetland observation points were recorded for each delineated wetland. Watercourses were delineated using the indicators of the ordinary high-water mark as described in Regulatory Guidance Letter 05-05 (USACE 2005). Mapped wetland observation locations were then verified by a New Jersey licensed professional land surveyor. Photographs of the site, wetland observation soil pits, and vegetation were taken and are included in **Attachment B**.

2.3 Ecological Community Assessment

During the site visits an assessment of the ecological communities in the Project Areas was conducted by mapping and classifying the dominant wetlands and deepwater habitat types as defined by Cowardin et al. (1979). The upland communities were mapped based on the observed dominant plant species and size of trees where applicable. Additionally, incidental wildlife species observations were documented during the site visits. Assessment of potential habitat for species identified through New Jersey Department of Environmental Protection (NJDEP) Natural Heritage Program (NHP) and the United States Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) searches were completed for each mapped ecological community.



3. Results

3.1 Desktop Review

3.1.1 BLE WRA

3.1.1.1 Proposed Onshore Substation at BL England Generating Station

The Proposed Onshore Substation at the BLE England Generating Station, is bound by residential development to the south, North Shore Road and commercial properties to the east, Great Egg Harbor to the north, and coastal wetlands to the west. The Project Review Area is within the NJDEP Great Egg Harbor Watershed Management Area (WMA-15) (**Figure 3.1-1**).

According to the NJDEP's Surface Quality Standards (N.J.A.C. 7:9B, adopted amendments N.J.A.C. 7:9B-1.15), Great Egg Harbor is classified as freshwater- non trout/ saline estuary (FW2-NT/SE1) waters. Designated uses for this classification include maintenance, migration and propagation of the natural and established biota, primary contact recreation, industrial and agricultural water supply, public potable water supply after conventional filtration treatment, migration of diadromous fish, and secondary contact recreation. There are no other New Jersey mapped waterbodies in the Project Review Area.

The NJDEP Wetlands Land Use/Land Cover Map shows pocket areas of wetlands within the Project Review Area. Sections of the golf course are identified as managed wetland in built-up maintained recreation area (**Figure 3.1-2**). On the easternmost side of the Project Review Area, wetlands are identified as deciduous dominated mixed wooded wetlands, deciduous wooded wetlands, coniferous dominated mixed wooded wetlands, and *Phragmites* dominate interior wetlands (**Figure 3.1-2**). Wetlands along and west of the rail line are identified as *Phragmites* dominate coastal wetlands, coniferous dominated mixed scrub/shrub wetlands, deciduous dominated mixed wooded wetlands, and low marsh saline marsh (**Figure 3.1-2**).

The USFWS National Wetlands Inventory (NWI) Map classifies the two small freshwater ponds on the golf course portion of the Project Review Area (Cowardin classification PUBHx). The wetlands to the west of the rail line are identified as freshwater forested/shrub wetland (PSS1/4B) and estuarine and marine wetland (E2Em1Pd) (**Figure 3.1-3**). The eastern portion of the Project Review Area contains freshwater forested/shrub wetlands (PF01E and PF01B) and the northern edge of the Project Review Area where Great Egg Harbor is located is identified as estuarine and marine deepwater (E1UBL).

The United States Department of Agriculture Web Soil Survey (USDA WSS) report indicates the majority of soil map units (greater than 10 percent contributing area) within the Project Review Area are classified as Berryland and Mullica soils, Galloway loamy sand, Pawcatuck-Transquaking complex, and Hammonton sandy loam (Attachment A). Lesser amounts of mapped soils include Downer sandy loam, Hooksan sand, and urban land. Berryland and Mullica soils are hydric and very poorly drained, sandy fluviomarine sediments with overlying organic materials dominantly from herbaceous vegetation. Galloway loamy sand is somewhat poorly drained and consists of unconsolidated sandy marine sediments. Galloway loamy sands are typically found in dunes and flats and are not hydric. Hammonton sandy loam soils are non-hydric, moderately well drained and found on flats and depressions. The acreage, percent composition, soil series, and hydric rating for the Project Review Area soil map units are presented in Error! Reference source not found.3.1.1-1. The USDA Custom Soil Resource Report is provided in Attachment A.

Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) (2015 Preliminary Work Map Data) showed that the majority of the Project Review Area is within Special Flood Hazard Area Zone AE (1% annual chance flood level), with the northern extent of the Project Review Area within Zone X (0.2%



annual chance flood level) (**Figure 3.1-4**). The northeastern edge of the Project Review Area is designed Flood Zone VE (1.0% annual chance of flood with a velocity hazard) (**Figure 3.1-4**). **Table 3.1.1-3** summarizes the extents of each flood hazard area (FHA) within the Project Review Area.

Table 3.1.1-1. Soil Map Units within Project Review Area – BL England

Map Unit Symbol	Map Unit Name	Percent of Project Review Area	Soil Series Component	% Component	Hydric Rating
BEXAS	Berryland and Mullica soils, 0 top 2 percent slopes, occasionally flooded	33.4%	Berryland	50	Yes
			Mullica	40	Yes
			Atsion	5	Yes
			Manahawkin	5	Yes
	Downer sandy loam, 2 to 5 percent slopes, Northern Tidewater Area	3.7%	Downer	80	No
DoeBO			Galestown	10	No
			Ingleside	5	No
			Hammonton	5	No
GamB	Galloway loamy sand, 0 to 5 percent slopes	23.9%	Galloway	85	No
			Downer	5	No
			Atsion	5	Yes
			Mullica	5	Yes
HboA	Hammonton sandy loam, 0 to 2 percent slopes	11.1%	Hammonton and similar soils	85	No
			Mullica	5	Yes
			Atsion	5	Yes
			Fallsington	5	Yes



Map Unit Symbol	Map Unit Name	Percent of Project Review Area	Soil Series Component	% Component	Hydric Rating
HorDr	Hooksan sand, 2 to 15 percent slopes, rarely flooded	0.3%	Hooksan	90	No
			Pawcatuck	5	Yes
			Beaches	5	Yes
PdwAv	Pawcatuck- Transquaking complex, 0 to 1 percent slopes, very frequently flooded	14.7%	Pawcatuck	60	Yes
			Transquaking	25	Yes
			Berryland	5	Yes
			Appoquinimink	5	Yes
			Mullica	5	Yes
UR	Urban Land	5.1%	Urban land	95	No
			Udorthents	5	No
WATER	Water	14.5%	Water	100	N/A
Totals for Project Review Area		100.0%			





Figure 3.1.1-1. NJDEP Watershed Management Areas Map



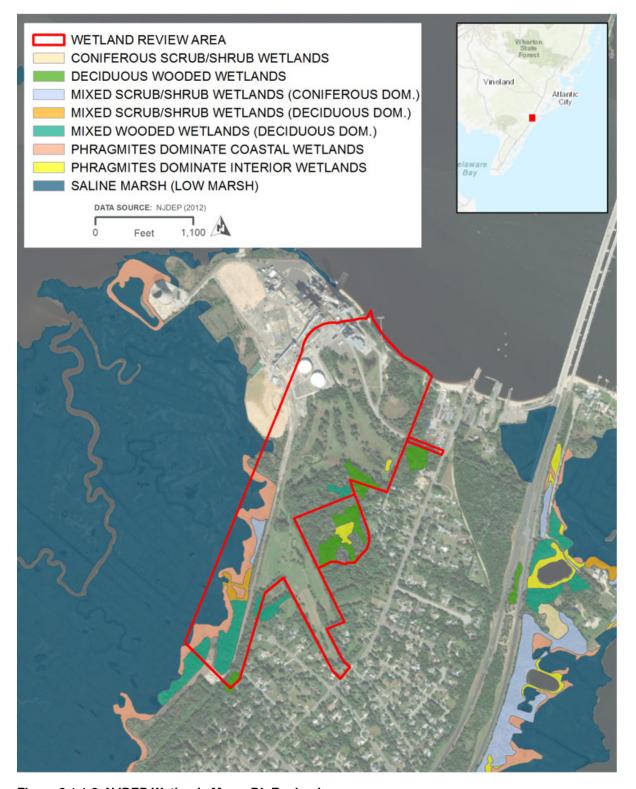


Figure 3.1.1-2. NJDEP Wetlands Map – BL England



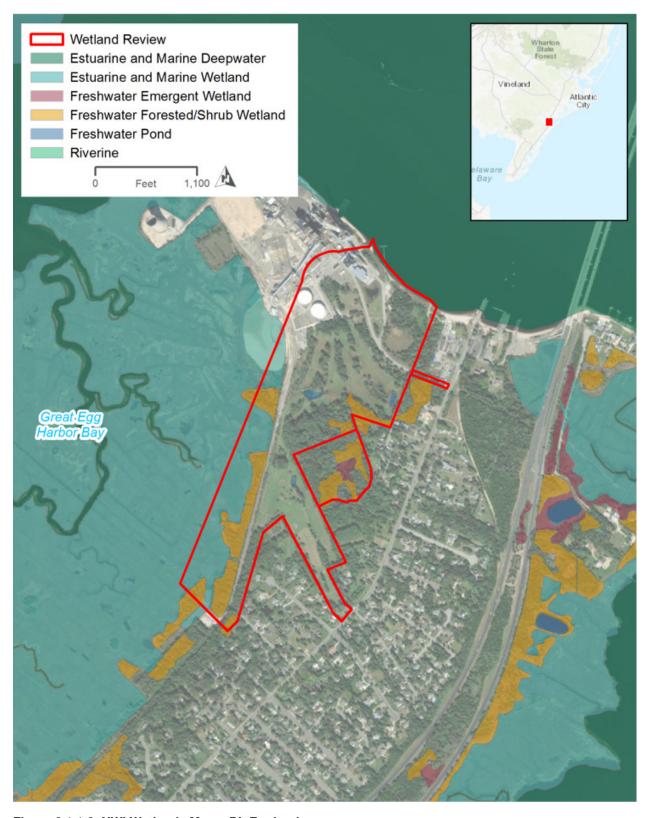


Figure 3.1.1-3. NWI Wetlands Map - BL England





Figure 3.1.1-4. FEMA Preliminary Flood Hazard Map – BL England



3.1.1.2 Proposed Export Cable Route - Roosevelt Boulevard

The proposed export cable route (ECR) travels northwest from Ocean City into Upper Township along Roosevelt Boulevard. On the western side of the Roosevelt Boulevard Bridge, the Project Review Area is bound by commercial development and coastal wetlands to the north, south, west, and Peck Bay to the east. The Project Review Area on the eastern side of Roosevelt Boulevard Bridge is bordered by coastal wetlands to the north, residential and commercial development to the south and east, and Peck Bay to the west. The Project Review Area is within the NJDEP Great Egg Harbor and Cape May Watershed Management Area (WMA-15 and WMA-16) (**Figure 3.1-5**).

According to the NJDEP's Surface Quality Standards, Peck Bay is classified as FW2-NT/SE1 waters. Designated uses for this classification includes maintenance, migration and propagation of the natural and established biota, primary contact recreation, industrial and agricultural water supply, public potable water supply after conventional filtration treatment, migration of diadromous fish, and secondary contact recreation.

The NJDEP Wetlands Land Use/Land Cover Map for the Roosevelt Boulevard Project Review Area does not have any mapped wetlands within the road right-of-way (**Figure 3.1-6**). Wetlands that surround the road right-of-way are mapped as predominately saline low marsh with pockets of *Phragmites* dominate coastal wetlands, coniferous wooded wetlands, and mixed scrub/shrub deciduous dominated wetlands.

The USFWS NWI Map classifies the wetlands north and south of Roosevelt Boulevard as estuarine and marine wetlands (Cowardin classification E2Em1Pd) and estuarine and marine deepwater (Cowardin classification E1UBL). Small pockets of freshwater forested/shrub wetland classification PFO4B) are located on the western edge of the Roosevelt Boulevard Project Review Area, and freshwater emergent wetland (Cowardin classification PEM1R) are located on the eastern edge of Roosevelt Boulevard Project Review Area (Figure 3.1-7).

The USDA WSS report indicates the majority of soil map units within the Project Review Area are classified as urban land and urban land-Psamments (greater than 10 percent contributing area) (Attachment A). Lesser amounts of mapped soil includes Pawcatuck-Transquaking complex and Appoquinimink-Transquaking-Mispillion complex. Urban land is surface that is covered by pavement, concrete, buildings, and other structures underlain by disturbed and natural soil material. Urban land-Psamments, sulfidic substratum complex is nonhydric and moderately well-drained, with sandy human-transported parent material. Pawcatuck-Transquaking complex is hydric, very poorly drained, and has a typical profile of mucky peat from the surface to a depth of 45 inches. The acreage, percent composition, soil series, and hydric rating for soil map units within the Project Review Area are presented in **Table 3.1.1-2**. The USDA Custom Soil Resource Report is provided in Attachment A.

FEMA floodplain maps (FEMA 2015 Preliminary Work Map Data) show that the entire Project Review Area is within Special Flood Hazard Area Zone AE (1% annual chance flood level) (**Figure 3.1-8**). **Table 3.1.1-3** summarizes the extents of each flood hazard zone within the Project Review Area.



Map Unit Symbol	Map Unit Name	Percent of Project Review Area	Soil Series Component	% Component	Hydric Rating
AptAv	Appoquinimink- Transquaking- Mispillion complex, 0 to 1 percent slopes, very frequently flooded	1.6%	Appoquinimink	40	Yes
			Transquaking	30	Yes
			Mispillion	25	Yes
			Hammonton	5	Yes
PdwAv	Pawcatuck- Transquaking complex, 0 to 1 percent slopes, very frequently flooded	27.5%	Pawcatuck	60	Yes
			Transquaking	25	Yes
			Berryland	5	Yes
			Appoquinimink	5	Yes
			Mullica	5	Yes
UR	Urban land	38.0%	Urban Land	95	No
			Udorthents	5	No
USPSAS	Urban land- Psamments, sulfidic substratum complex, 0 to 2 percent slopes, occasionally flooded	28.1%	Urban Land, sulfidic substratum	60	No
			Psamments, sulfidic substratum	30	No
			Transquaking	5	Yes
			Appoquinimink	5	Yes
WATER	Water	0.1%	Water	100	N/A
Totals for Project Review Area		100.0%			_

Table 3.1.1-3. Summary of FEMA Flood Hazard Zones within Project Review Area

Map Unit Symbol	Percent of Project Review Area – BL England	Percent of Project Review Area – Roosevelt Blvd
Zone AE (1.0%)	76.6%	100
Zone X (0.2%)	9.3%	< 0.01
Zone X (minimal flood risk)	12.4%	
Zone VE (1.0% risk with velocity hazard)	2.1%	
Totals for Project Review Area	100.0%	100.0%





Figure 3.1.1-5. NJDEP Wetlands Map – Roosevelt Boulevard



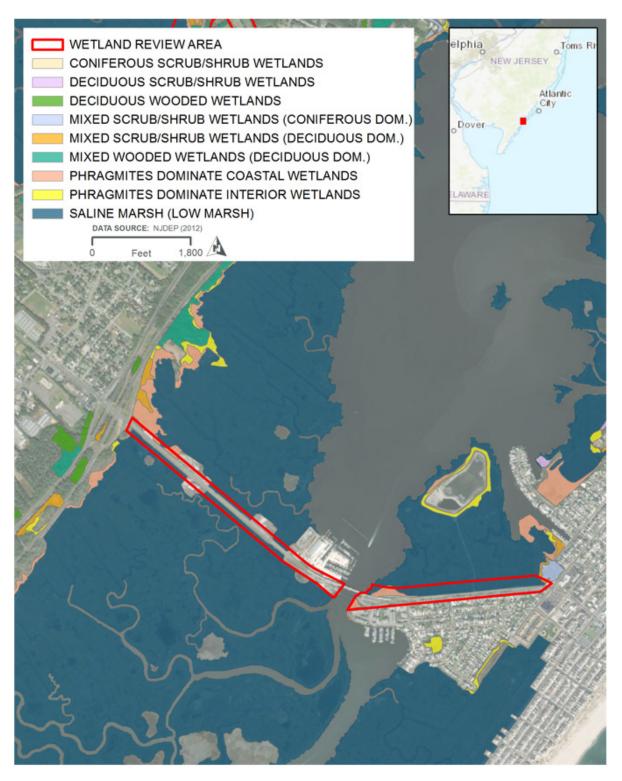


Figure 3.1.1-6. NJDEP Wetlands Map - Roosevelt Boulevard





Figure 3.1.1-7. NWI Wetlands Map - Roosevelt Boulevard





Figure 3.1.1-8. FEMA Preliminary Flood Hazard Map – Roosevelt Boulevard



3.2 Wetland Delineation Field Survey

3.2.1 BLE WRA

3.2.1.1 Proposed Onshore Substation at BL England Generating Station

The NJDEP Wetlands LOI (LOI File #0511-03-0011.4; issued March 19, 2019) for the BL England Generating Station parcel was reviewed prior to the field work and the LOI line uploaded on the field GPS units. The lines were walked and verified based on the three-parameter approach (soils, vegetation, and hydrology) described in the 1989 Federal Interagency Manual. The wetland boundaries cited in the LOI were generally accurate. However, during the site walk-over on 16 November 2021 with NJDEP, four additional areas deemed to be wetland by NJDEP were identified and mapped by GPS. NJDEP identified four wetland areas outlined below.

<u>Wetland Verification Area A</u> - NJDEP identified an area that contained wetland indicative vegetation (red maple and sweetgum and hydrophytic grasses), F6 (redox dark surface) indicative soils, and evidence of hydrology (water-stained leaves, high water table, and soil saturation). This area is 0.44 acre in size and extended from the forested area to the periodically mowed golf course fairway.

<u>Wetland Verification Area B</u> – Is a depressed area within a periodically mowed golf course fairway featuring some wetland-indicative herbs and F6 (redox dark surface)-indicative soils. The area is 0.15 acre in size and contained a small area of trees including red maple and sweetgum. Hydrology indicator was high water table.

<u>Wetland Verification Area C</u> - NJDEP also identified a small (0.003-acre) area within a wooded patch that contained wetland characteristics (soils [F6; redox dark surface) vegetation [sedges and rushes], and waterstained fallen leaves.

<u>Wetland Verification Area D</u> - NJDEP identified a narrow, slightly depressed drainage swale running northeast to southwest through one of the periodically mowed fairways on the former golf course. The area is 0.16 acre in size. Wetland-indicative vegetation consisted of lamp rush (*Juncus effusus*) and yellow nut sedge (*Cyperus esculentus*); soils had a dark surface layer that met the F6 Indicator (redox dark surface). The subsoil consisted of dense sand with evident organic streaking and iron staining.

Upland areas identified outside of these wetland areas had no hydric soil indicators were observed. Dominant species within the adjacent upland meadow areas area include white clover (*Trifolium repens*) and Timothy grass. White clover and Timothy grass have a FACU indicator status. Upland dominant vegetation in the scrub/shrub and forested areas included multiflora rose (FACU), mugwort (UPL), American holly (FACU), Timothy grass (FACU), Virginia creeper (FACU), mountain holly saplings (OBL), Northern bayberry (FACU), Russian olive (FAC). Based on the dominance test not meeting 50% of species that are OBL, FACW, or FAC or a prevalence index not less than or equal to 3.0, this area is an upland.

Table 3.2.1-1. Summary of Wetland Delineation Field Survey Results – BL England

Wetland ID	Hydrology Indicators	Dominant Vegetation	Hydric Soil Indicator	Size (Acres)	NWI Cowardin Classifi- cation
Wetland Verification Area A	Water Stained leaves (B9), high water table (A2) and soil saturation (A3)	Acer Rubrum (FAC) and Liquidambar styraciflua (FAC)	Redox dark surface (F6)	0.4	E1UBL6



Wetland ID	Hydrology Indicators	Dominant Vegetation	Hydric Soil Indicator	Size (Acres)	NWI Cowardin Classifi- cation
Wetland Verification Area B	Soil saturation (A3)	Acer Rubrum (FAC) and Liquidambar styraciflua (FAC)	Redox dark surface (F6)	0.2	None mapped
Wetland Verification Area C	Water-stained leaves (B9)	Carex stricta (OBL), Acer Rubrum (FAC) and Liquidambar styraciflua (FAC), mountain holly (OBL),	Redox dark surface (F6)	0.003	PUBHx
Wetland Verification Area D	iron deposits (B5), Water- stained leaves (B9)	Lamp rush (OBL), yellow nut sedge (FAC)	Redox dark surface (F6)	0.2	PUBHx
Totals for Project Review Area				1.2	

FACW= Facultative Wetland species

FAC = Facultative species

OBL = Obligate species





Figure 3.2.1-1. Summary of Wetland Delineation Field Survey Results – BL England



3.2.1.2 Proposed Export Cable Route - Roosevelt Boulevard

<u>Wetland A</u> – Wetland A is located on the southern side of Roosevelt Boulevard and on the western side of the Roosevelt Boulevard Bridge (**Figure 3.2.1-2**). The wetland line was delineated within 150 feet of Roosevelt Boulevard and everything beyond the line is saline marsh. Wetland A is identified as "E2EM1Pd" (Estuarine, Intertidal, Emergent, Persistent, Irregularly Flooded, Partially Drained/Ditched) by NWI. Wetland A is dominated by salt meadow cordgrass (*Spartina patens*), having an OBL indicator status, providing a hydrophytic vegetation indicator through positive dominance test and prevalence index. Soils in Wetland A were indicative of hydric soils due to the presence of histosols (Indicator A1). Hydrology indicators include the presence of saturation, aquatic fauna, and a hydrogen sulfide odor. A summary of wetland indicators is provided in **Table 3.2.1-2**.

An upland observation point was taken outside of Wetland A and no hydric soil indicators were observed (**Figure 14**). The dominant species within the upland area includes Kentucky bluegrass (*Poa pratensis*). Kentucky bluegrass has a FACU indicator status. Based on the dominance test not meeting 50% of species that are OBL, FACW, or FAC or a prevalence index not less than or equal to 3.0, this area is an upland.

<u>Wetland B</u> – Wetland B is located on the northern side of Roosevelt Boulevard on the western side of the Roosevelt Boulevard Bridge (**Figure 3.2.1-2**). Wetland B is identified as "E2EM1Pd" (Estuarine, Intertidal, Emergent, Persistent, Irregularly Flooded, Partially Drained/Ditched) by NWI. Wetland B is dominated by common reed, having a FACW indicator status, providing a hydrophytic vegetation indicator through positive dominance test and prevalence index. Soils in Wetland B were indicative of hydric soils due to the presence of histosols (Indicator A1). Hydrology indicators include the presence of a high water table, saturation, and a sparsely vegetated concave surface. A summary of wetland indicators is provided in **Table 3.2.1-2**.

An upland observation point was taken outside of Wetland B and no hydric soil indicators were observed (**Figure 14**). Dominant species within the upland area include Kentucky bluegrass. Kentucky bluegrass has a FACU indicator status. Based on the dominance test not meeting 50% of species that are OBL, FACW, or FAC or a prevalence index not less than or equal to 3.0, this area is an upland.

Wetland C – Wetland C is located on the eastern side of Roosevelt Boulevard Bridge and extends on the north side of Roosevelt Boulevard west around the footings of the bridge and south along the shoreline of Crook Horn Creek (Figure 3.2.1-2). Wetland C is identified as "E2EM1P" (Estuarine, Intertidal, Emergent, Persistent, Irregularly flooded) by NWI. Wetland C is dominated by salt meadow cordgrass, having an OBL indicator status, providing a hydrophytic vegetation indicator through positive dominance test and prevalence index. Soils in Wetland C were indicative of hydric soils due to the presence of a depleted matrix (Indicator F3). Hydrology indicators include the saturation and drift deposits. A summary of wetland indictors is provided in Table 3.2.1-2.

An upland observation point was taken outside of Wetland C and no hydric soil indicators were observed (**Figure 3.2.1-2**). Dominant species within the upland area include Kentucky bluegrass and Virginia creeper (*Parthenocissus quinquefolia*). Kentucky bluegrass and Virginia creeper have a FACU indicator status. Based on the dominance test not meeting 50% of species that are OBL, FACW, or FAC or a prevalence index not less than or equal to 3.0, this area is an upland. There were no other watercourses or waterbodies present within the Project Study Area.



Table 3.2.1-2. Summary of Wetland Delineation Field Survey Results – Roosevelt Boulevard

Wetland ID	Hydrology Indicators	Dominant Vegetation	Hydric Soil Indicator	NWI Cowardin Classification
Wetland A	Saturation, aquatic fauna, hydrogen sulfide odor	Spartina patens (OBL)	Histosol (A1)	E2EM1Pd
Wetland B	High water table, saturation, sparsely vegetated concave surface	Phragmites australis (FACW)	Histosol (A1)	E2EM1Pd
Wetland C	Saturation, drift deposits	Spartina patens (OBL)	Depleted Matrix (F3)	E2EM1P

FACW= Facultative Wetland species

OBL = Obligate species





Figure 3.2.1-2. Field Survey Wetland Delineation Map – Roosevelt Boulevard



3.3 Wildlife

3.3.1 BLE WRA

3.3.1.1 Proposed Onshore substation at BL England Generating Facility

Fish – There were no fish species observed during the Project Review Area surveys.

Amphibians –green frogs (*Rana clamitans*) were observed in or proximate to Wetlands C and D during the Project Review Area surveys. No toads or salamanders were observed; the lack of ground cover (fallen trees, bark, or deep leaf litter) may limit the Project Review Area's attractiveness to some amphibians.

Reptiles – Parts of one turtle shell, possibly a box turtle, was observed near the railroad grade on the BL England parcel. No lizards or snakes were observed; the lack of ground cover (fallen trees, bark, or deep leaf litter) may limit the Project Review Area's attractiveness to some reptiles.

Birds – A total of 17 species of birds were observed during the September 2019 Project Review Area surveys; 12 of which were common passerine species. Raptors observed in the Project Review Area include turkey vultures (*Cathartes aura*), kestrel (*Falco sparverius*), and peregrine falcon (*Falco peregrinus*; State Endangered). Dominant passerine bird species present were the gray catbird (*Dumetella carolinensis*), cardinal (*Cardinalis cardinalis*), mourning dove (*Zenaida macroura*), and black-capped chickadee (*Poecile atricapillus*). Snowy egrets (*Egretta thula*; State Special Concern Breeding), great egrets (*Ardea alba*), ring-billed gull (*Larus delawarensis*) and laughing gull (*Leucophaeus atricilla*) were observed flying over Great Egg Harbor Bay.

Mammals – mammals observed within the Project Review Area were white-tailed deer (*Odocoileus virginianus*) grazing on the golf course, gray squirrels (*Sciurus carolinensis*), and chipmunks (*Tamias striatus*). Raccoon (*Procyon lotor*) tracks were observed in the mud bordering the ditches and small ponds. No large animal burrows were observed during the Project Review Area surveys.

3.3.1.2 Proposed Export Cable Route - Roosevelt Boulevard

There were no fish, amphibians, reptiles, or mammal species observed along Roosevelt Boulevard during the Project Review Area survey. There are numerous osprey nesting platforms in the salt marshes along Roosevelt Boulevard. There was no evidence of heron or egret rookeries or potential nesting areas. Northern harrier (*Circus hudsonius;* State endangered), snowy egret, great egret, and osprey (*Pandion haliaetus*) were observed by Roosevelt Boulevard.

3.4 Species-Specific Assessment

3.4.1 BLE WRA

Under the Endangered Species Act (ESA) and the New Jersey Endangered and Nongame Species Program, species and their habitats potentially impacted by construction and operation of the proposed Project were evaluated. Ocean Wind conducted site- and species-specific endangered species habitat surveys to determine the location and extent of these resources so they can be avoided or mitigated during construction, operations, maintenance and decommissioning. Readily available data was also reviewed to identify threatened or endangered species within the Project Area. The Project site specific habitat assessment surveys were conducted and coordinated with NJDEP, USFWS, USACE and NOAA.

Additional threatened and endangered species information is provided by the USFWS IPaC and the New Jersey Natural Heritage Program Landscape Project database. These databases generate lists of Federally and State protected species potentially occurring within a particular area. Species identified using these tools within the Onshore Project Areas are outlined in **Table 3.6.1-1**, **3.6.2-1** and **3.6.2-2**. In addition to those listed



species in the table below, special concern species of birds, reptiles, amphibians, mammals, and invertebrates are also monitored by the NJDEP. Special concern species that could potentially occur in these areas include but are not limited to spotted turtle (*Clemmys guttata*) and the eastern box turtle (*Terrapene carolina carolina*). Additionally, the monarch butterfly (*Donaus plexippus plexippus*) has been listed as a candidate species by the USFWS and has the potential to occur within the Project Areas.

Species that were directly observed at the Project Review Areas or that require habitat specific surveys are discussed in further detail below.

Table 3.6.1-1. Federal and State endangered and threatened species with potential to occur within the BL England Project Area.

Species Common	Species Scientific	Status
	Mammals	
Northern long-eared bat	Myotis septentrionalis	FT
Fin whale	Balaenoptera physalus	FE, SE
Humpback whale	Megaptera novaeangliae	FE, SE
North Atlantic right whale	Eubalaena glacialis	FE, SE
	Birds	
Bald eagle	Haliaeetus leucocephalus	SE
Barred owl	Strix varia	ST
Cattle egret	Bubulcus ibis	ST
Osprey	Pandion haliaetus	ST
Black skimmer	Rynchops niger	SE
Black-crowned night heron	Nycticorax nycticorax	ST
Grasshopper sparrow	Ammodramus savannarum	ST
Least tern	Sternula antillarum	SE
Northern harrier	Circus cyaneus	SE
Peregrine falcon	Falco peregrinus	SE
Roseate tern	Sterna dougallii dougallii	FE, SE
Yellow-crowned night heron	Nyctanassa violacea	ST
	Reptiles	
Northern pine snake	Pituophis melanoleucus melanoleucus	ST
Timber rattlesnake	Crotalus horridus horridus	SE
Atlantic green turtle	Chelonia mydas	FT, ST
Atlantic loggerhead	Caretta caretta	FT, SE
Atlantic leatherback	Dermochelys coriacea	FE, SE
Kemp's Ridley sea turtle	Lepidochelys kempii	FE, ST
	Amphibians	
Pine barrens treefrog	Hyla andersonii	ST
Cope's gray treefrog (southern gray treefrog)	Hyla chrysoscelis	SE
	Fish	
Atlantic sturgeon	Acipenser oxyrinchus	FE, SE

Status: FT - Federally Threatened, FE - Federally Endangered, SE - State Endangered, ST - State Threatened



Swamp Pink – is listed as a Federally-threatened species and as an endangered species in New Jersey. Upper Township, NJ is cited by USFWS as being documented for the presence of swamp pink. Two crews of HDR field personnel with experience in identifying rare plants such as swamp pink and their suitable habitats observed no specimens of swamp pink in the Project Review Area over the course of two days. Only one of the sympatric species, red maple, is present at the BL England Project Review Area, and suitable habitat is very limited. Further, the wetland hummocks/microtopographic relief cited in the USFWS dossier is lacking in the BL England Project Review Area (USFWS, 2019). The wetland areas along Roosevelt Boulevard are tidal marshes and thus would be unsuitable for swamp pink.

Bald Eagle - is listed as an Endangered Species in New Jersey. There were no bald eagles observed in the BL England or Roosevelt Boulevard Project Review Areas. The Project Review Areas themselves do not offer foraging opportunities for bald eagles though they may forage over the open waters of Great Egg Harbor Bay north of the Project Review Areas.

Northern Harrier – is listed as an Endangered Species in New Jersey. Northern harrier were observed over the tidal marshes along Roosevelt Boulevard and over the BL England Generating Station parcel. Northern harriers nest on the ground in undisturbed areas typically near wetlands; this habitat type is not present within the Project Review Areas.

Osprey – is listed as a Threatened Species in New Jersey. Osprey were observed flying over the tidal marshes along Roosevelt Boulevard. There are numerous osprey nesting platforms in the herbaceous wetlands on either side of Roosevelt Boulevard. One osprey was observed on a nesting platform and there appeared to be two nests that were previously occupied during the breeding season. No osprey were observed directly foraging on Roosevelt Boulevard or the Project Review Area.

Peregrine Falcon – is listed as an Endangered Species in New Jersey. A peregrine falcon was observed perched on the coal delivery shuttle at the BL England Generating Station parcel. Peregrine falcons are known to nest on buildings and bridges. No peregrine falcon nests were observed on any of the buildings or structures at the BL England Project Review Area. Peregrine falcons favor open areas for foraging and often hunt over marshes, beaches, or open water. The BL England Project Review Area may provide adequate habitat for foraging; however, no peregrine falcons were observed foraging during the Project Review Area investigation.

4. Literature Cited

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Attachment A. USDA NRCS Web Soil Survey Custom Soil Resource Report



Natural Resources

Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Cape May County, New Jersey



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2 053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

🔥 Landfill

A Lava Flow

▲ Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

LEGEND

Spoil Area

Stony Spot

N Very Stony Spot

Wet Spot

△ Other

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

00

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cape May County, New Jersey Survey Area Data: Version 15, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 25, 2011—Mar 26, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BEXAS	Berryland and Mullica soils, 0 to 2 percent slopes, occasionally flooded	36.1	33.4%
DoeBO	Downer sandy loam, 2 to 5 percent slopes, Northern Tidewater Area	4.0	3.7%
EveB	Evesboro sand, 0 to 5 percent slopes	0.0	0.0%
GamB	Galloway loamy sand, 0 to 5 percent slopes	25.9	23.9%
HboA	Hammonton sandy loam, 0 to 2 percent slopes	12.0	11.1%
HorDr	Hooksan sand, 2 to 15 percent slopes, rarely flooded	0.3	0.3%
PdwAv	Pawcatuck-Transquaking complex, 0 to 1 percent slopes, very frequently flooded	15.9	14.7%
UR	Urban land	12.4	11.4%
WATER	Water	1.7	1.5%
Totals for Area of Interest		108.3	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different

management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Cape May County, New Jersey

BEXAS—Berryland and Mullica soils, 0 to 2 percent slopes, occasionally flooded

Map Unit Setting

National map unit symbol: v4qb

Elevation: 0 to 140 feet

Mean annual precipitation: 28 to 59 inches Mean annual air temperature: 46 to 79 degrees F

Frost-free period: 161 to 231 days

Farmland classification: Farmland of unique importance

Map Unit Composition

Berryland, occasionally flooded, and similar soils: 50 percent Mullica, occasionally flooded, and similar soils: 40 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Berryland, Occasionally Flooded

Setting

Landform: Depressions, flats, drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope

Down-slope shape: Concave, linear Across-slope shape: Concave

Parent material: Sandy fluviomarine deposits

Typical profile

Ag - 0 to 11 inches: sand Bh - 11 to 19 inches: sand Bg - 19 to 32 inches: sand B'h - 32 to 40 inches: sand Cg1 - 40 to 44 inches: sand

Cg2 - 44 to 80 inches: stratified sand to sandy loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00

to 20.00 in/hr)

Depth to water table: About 0 to 6 inches Frequency of flooding: Occasional

Frequency of ponding: Occasional

Available water storage in profile: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: A/D Hydric soil rating: Yes

Description of Mullica, Occasionally Flooded

Setting

Landform: Depressions, flood plains, drainageways Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope

Down-slope shape: Concave, linear Across-slope shape: Concave, linear

Parent material: Sandy fluviomarine deposits and/or loamy fluviomarine deposits

Typical profile

Oe - 0 to 2 inches: mucky peat
Ag - 2 to 9 inches: sandy loam
Bg1 - 9 to 14 inches: sandy loam
Bg2 - 14 to 28 inches: sandy loam
Cg1 - 28 to 31 inches: loamy sand
Cg2 - 31 to 40 inches: sand

Cg3 - 40 to 80 inches: gravelly loamy sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to

high (0.60 to 5.95 in/hr)

Depth to water table: About 0 to 6 inches Frequency of flooding: Occasional Frequency of ponding: Occasional

Available water storage in profile: Moderate (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4w

Hydrologic Soil Group: A/D Hydric soil rating: Yes

Minor Components

Atsion

Percent of map unit: 5 percent

Landform: Flats

Landform position (two-dimensional): Footslope Landform position (three-dimensional): Dip, talf

Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

Manahawkin, frequently flooded

Percent of map unit: 5 percent Landform: Flood plains Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

DoeBO—Downer sandy loam, 2 to 5 percent slopes, Northern Tidewater Area

Map Unit Setting

National map unit symbol: 2thwh

Elevation: 0 to 210 feet

Mean annual precipitation: 41 to 50 inches Mean annual air temperature: 46 to 64 degrees F

Frost-free period: 190 to 260 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Downer and similar soils: 80 percent Minor components: 20 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Downer

Setting

Landform: Low hills, flats, knolls

Landform position (two-dimensional): Shoulder

Landform position (three-dimensional): Nose slope, rise

Down-slope shape: Linear, convex Across-slope shape: Linear, convex

Parent material: Loamy fluviomarine deposits

Typical profile

Ap - 0 to 10 inches: sandy loam BE - 10 to 16 inches: loamy sand Bt - 16 to 28 inches: sandy loam C1 - 28 to 48 inches: loamy sand C2 - 48 to 80 inches: sand

Properties and qualities

Slope: 2 to 5 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to

high (0.60 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0

mmhos/cm)

Available water storage in profile: Moderate (about 6.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: A Hydric soil rating: No

Minor Components

Galestown

Percent of map unit: 10 percent

Landform: Broad interstream divides, flats Landform position (two-dimensional): Shoulder Landform position (three-dimensional): Rise

Down-slope shape: Linear Across-slope shape: Convex

Hydric soil rating: No

Ingleside

Percent of map unit: 5 percent Landform: Low hills, flats

Landform position (two-dimensional): Shoulder

Landform position (three-dimensional): Nose slope, rise

Down-slope shape: Linear Across-slope shape: Convex

Hydric soil rating: No

Hammonton

Percent of map unit: 5 percent

Landform: Flats, broad interstream divides

Landform position (two-dimensional): Footslope, shoulder

Landform position (three-dimensional): Dip

Down-slope shape: Convex Across-slope shape: Linear

Hydric soil rating: No

EveB—Evesboro sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: t0tf

Elevation: 0 to 150 feet

Mean annual precipitation: 28 to 59 inches Mean annual air temperature: 46 to 79 degrees F

Frost-free period: 161 to 231 days

Farmland classification: Farmland of local importance

Map Unit Composition

Evesboro and similar soils: 80 percent

Minor components: 20 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Evesboro

Setting

Landform: Low hills

Landform position (three-dimensional): Interfluve, side slope

Down-slope shape: Convex Across-slope shape: Linear

Parent material: Sandy eolian deposits and/or sandy fluviomarine deposits

Typical profile

A - 0 to 4 inches: sand AB - 4 to 17 inches: sand Bw - 17 to 31 inches: sand

C - 31 to 80 inches: stratified loamy sand to sand

Properties and qualities

Slope: 0 to 5 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Excessively drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00

to 20.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Available water storage in profile: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: A Hydric soil rating: No

Minor Components

Atsion

Percent of map unit: 5 percent

Landform: Flats

Landform position (two-dimensional): Footslope Landform position (three-dimensional): Dip, talf

Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

Lakehurst

Percent of map unit: 5 percent Landform: Depressions, flats

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope

Down-slope shape: Concave, linear Across-slope shape: Concave, linear

Hydric soil rating: No

Mullica, rarely flooded

Percent of map unit: 5 percent

Landform: Flood plains, drainageways, depressions Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Base slope

Down-slope shape: Linear, concave Across-slope shape: Linear, concave

Hydric soil rating: Yes

Downer

Percent of map unit: 5 percent Landform: Low hills, knolls

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear Across-slope shape: Convex

Hydric soil rating: No

GamB—Galloway loamy sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: t0tl Elevation: 0 to 130 feet

Mean annual precipitation: 28 to 59 inches
Mean annual air temperature: 46 to 79 degrees F

Frost-free period: 161 to 231 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Galloway and similar soils: 85 percent *Minor components*: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Galloway

Setting

Landform: Dunes, flats

Landform position (three-dimensional): Riser, dip

Down-slope shape: Convex, linear Across-slope shape: Convex, linear

Parent material: Unconsolidated sandy marine deposits

Typical profile

A - 0 to 2 inches: loamy sand E - 2 to 10 inches: loamy sand Bw1 - 10 to 24 inches: loamy sand Bw2 - 24 to 36 inches: loamy sand Cg1 - 36 to 52 inches: sand

Properties and qualities

Slope: 0 to 5 percent

Cg2 - 52 to 60 inches: sand

Depth to restrictive feature: More than 80 inches Natural drainage class: Somewhat poorly drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00

to 20.00 in/hr)

Depth to water table: About 12 to 18 inches

Frequency of flooding: None Frequency of ponding: None

Available water storage in profile: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: A/D Hydric soil rating: No

Minor Components

Downer

Percent of map unit: 5 percent Landform: Low hills, knolls

Landform position (three-dimensional): Base slope

Down-slope shape: Linear, convex

Across-slope shape: Linear Hydric soil rating: No

Atsion

Percent of map unit: 5 percent Landform: Flats, drainageways

Landform position (two-dimensional): Footslope, toeslope Landform position (three-dimensional): Base slope, dip, talf

Down-slope shape: Linear

Across-slope shape: Linear, concave

Hydric soil rating: Yes

Mullica, rarely flooded

Percent of map unit: 5 percent

Landform: Depressions, flood plains, drainageways Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope

Down-slope shape: Concave, linear Across-slope shape: Concave, linear

Hydric soil rating: Yes

HboA—Hammonton sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: t0tq

Elevation: 0 to 120 feet

Mean annual precipitation: 28 to 59 inches Mean annual air temperature: 46 to 79 degrees F

Frost-free period: 161 to 231 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Hammonton and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hammonton

Setting

Landform: Flats, depressions

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope

Down-slope shape: Linear, concave Across-slope shape: Linear, concave

Parent material: Coarse-loamy fluviomarine deposits

Typical profile

Ap - 0 to 8 inches: sandy loam
E - 8 to 18 inches: sandy loam
Bt - 18 to 36 inches: sandy loam

C - 36 to 60 inches: sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Moderately well drained

Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to

high (0.60 to 6.00 in/hr)

Depth to water table: About 18 to 42 inches

Frequency of flooding: None Frequency of ponding: None

Available water storage in profile: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: B Hydric soil rating: No

Minor Components

Mullica, rarely flooded

Percent of map unit: 5 percent

Landform: Flood plains, drainageways, depressions Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope

Down-slope shape: Linear, concave Across-slope shape: Linear, concave

Hydric soil rating: Yes

Atsion, rarely flooded

Percent of map unit: 5 percent Landform: Flats, drainageways

Landform position (two-dimensional): Toeslope, footslope Landform position (three-dimensional): Base slope, dip, talf

Down-slope shape: Linear

Across-slope shape: Linear, concave

Hydric soil rating: Yes

Fallsington

Percent of map unit: 5 percent Landform: Depressions, flats

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope

Down-slope shape: Concave, linear Across-slope shape: Concave, linear

Hydric soil rating: Yes

HorDr—Hooksan sand, 2 to 15 percent slopes, rarely flooded

Map Unit Setting

National map unit symbol: 2xhp7

Elevation: 0 to 20 feet

Mean annual precipitation: 41 to 50 inches Mean annual air temperature: 46 to 58 degrees F

Frost-free period: 190 to 260 days

Farmland classification: Not prime farmland

Map Unit Composition

Hooksan, rarely flooded, and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hooksan, Rarely Flooded

Setting

Landform: Dunes on barrier islands

Landform position (two-dimensional): Shoulder Landform position (three-dimensional): Rise

Down-slope shape: Convex

Across-slope shape: Convex, linear Parent material: Eolian sands

Typical profile

A - 0 to 6 inches: sand C - 6 to 90 inches: sand

Properties and qualities

Slope: 2 to 15 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Excessively drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00

to 20.00 in/hr)

Depth to water table: About 79 to 90 inches

Frequency of flooding: Rare Frequency of ponding: None

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0

mmhos/cm)

Available water storage in profile: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: A Hydric soil rating: No

Minor Components

Pawcatuck, very frequently flooded

Percent of map unit: 5 percent

Landform: Tidal marshes on barrier islands Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf

Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

Beaches, frequently flooded

Percent of map unit: 5 percent

Landform: Dunes

Down-slope shape: Convex Across-slope shape: Linear Hydric soil rating: Yes

PdwAv—Pawcatuck-Transquaking complex, 0 to 1 percent slopes, very frequently flooded

Map Unit Setting

National map unit symbol: v4qf

Elevation: 20 to 30 feet

Mean annual precipitation: 28 to 59 inches Mean annual air temperature: 46 to 79 degrees F

Frost-free period: 161 to 231 days

Farmland classification: Farmland of unique importance

Map Unit Composition

Pawcatuck, very frequently flooded, and similar soils: 60 percent Transquaking, very frequently flooded, and similar soils: 25 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pawcatuck, Very Frequently Flooded

Setting

Landform: Tidal marshes Down-slope shape: Linear Across-slope shape: Linear

Parent material: Herbaceous organic material over sandy marine deposits

Typical profile

Oe1 - 0 to 14 inches: mucky peat Oe2 - 14 to 45 inches: mucky peat Cg1 - 45 to 50 inches: loamy sand Cg2 - 50 to 90 inches: sand

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to

very high (0.57 to 19.98 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: Very frequent

Frequency of ponding: Frequent

Salinity, maximum in profile: Very slightly saline to strongly saline (2.0 to 32.0

mmhos/cm)

Available water storage in profile: Very high (about 13.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8w

Hydrologic Soil Group: D Hydric soil rating: Yes

Description of Transquaking, Very Frequently Flooded

Setting

Landform: Tidal marshes Down-slope shape: Linear Across-slope shape: Linear

Parent material: Herbaceous organic material over loamy

Typical profile

Oi - 0 to 14 inches: peat

Oe - 14 to 48 inches: mucky peat Oa - 48 to 57 inches: muck Cg - 57 to 72 inches: silty clay

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to

moderately high (0.06 to 0.20 in/hr) Depth to water table: About 0 inches Frequency of flooding: Very frequent Frequency of ponding: Frequent

Salinity, maximum in profile: Moderately saline to strongly saline (8.0 to 32.0

mmhos/cm)

Available water storage in profile: Very high (about 26.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8w

Hydrologic Soil Group: A/D Hydric soil rating: Yes

Minor Components

Berryland, frequently flooded

Percent of map unit: 5 percent

Landform: Flats

Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

Appoquinimink, very frequently flooded

Percent of map unit: 5 percent Landform: Tidal marshes

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf

Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

Mullica, rarely flooded

Percent of map unit: 5 percent

Landform: Flats

Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

UR—Urban land

Map Unit Setting

National map unit symbol: t0vn

Elevation: 0 to 170 feet

Mean annual precipitation: 30 to 64 inches Mean annual air temperature: 46 to 79 degrees F

Frost-free period: 131 to 178 days

Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 95 percent Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Parent material: Surface covered by pavement, concrete, buildings, and other structures underlain by disturbed and natural soil material

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8s

Hydric soil rating: Unranked

Minor Components

Udorthents

Percent of map unit: 5 percent

Landform: Low hills
Down-slope shape: Linear
Across-slope shape: Linear

Hydric soil rating: No

WATER—Water

Map Unit Setting

National map unit symbol: t0vs

Mean annual precipitation: 30 to 64 inches Mean annual air temperature: 46 to 79 degrees F

Frost-free period: 131 to 178 days

Farmland classification: Not prime farmland

Map Unit Composition

Water: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Land Classifications

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Hydric Rating by Map Unit

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

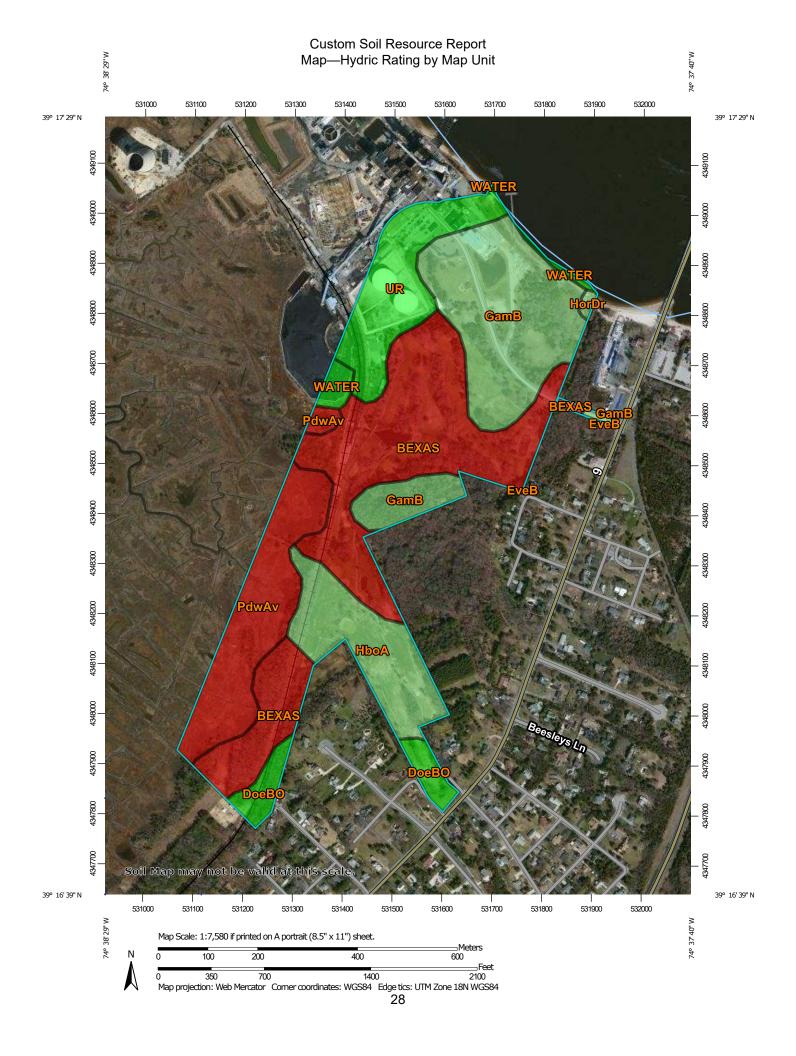
Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.



Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

Hydric (100%)

Hydric (66 to 99%)

Hydric (33 to 65%)

Hydric (1 to 32%)

Not Hydric (0%) Not rated or not available

Soil Rating Lines

Hydric (100%)

Hydric (66 to 99%)

Hydric (33 to 65%)

Hydric (1 to 32%)

Not Hydric (0%)

Not rated or not available

Soil Rating Points

Hydric (100%)

Hydric (66 to 99%)

Hydric (33 to 65%)

Hydric (1 to 32%)

Not Hydric (0%)

Not rated or not available

Streams and Canals

Water Features

Transportation

Rails

Interstate Highways

US Routes

Major Roads

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Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cape May County, New Jersey Survey Area Data: Version 15, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50.000 or larger.

Date(s) aerial images were photographed: Mar 25, 2011—Mar 26. 2011

Table—Hydric Rating by Map Unit

Man unit oumbal	Man unit name	Dating	Acres in AOI	Percent of AOI
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BEXAS	Berryland and Mullica soils, 0 to 2 percent slopes, occasionally flooded	100	36.1	33.4%
DoeBO	Downer sandy loam, 2 to 5 percent slopes, Northern Tidewater Area	0	4.0	3.7%
EveB	Evesboro sand, 0 to 5 percent slopes	10	0.0	0.0%
GamB	Galloway loamy sand, 0 to 5 percent slopes	10	25.9	23.9%
HboA	Hammonton sandy loam, 0 to 2 percent slopes	15	12.0	11.1%
HorDr	Hooksan sand, 2 to 15 percent slopes, rarely flooded	10	0.3	0.3%
PdwAv	Pawcatuck-Transquaking complex, 0 to 1 percent slopes, very frequently flooded	100	15.9	14.7%
UR	Urban land	0	12.4	11.4%
WATER	Water	0	1.7	1.5%
Totals for Area of Interest			108.3	100.0%

Rating Options—Hydric Rating by Map Unit

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Physical Properties

Soil Physical Properties are measured or inferred from direct observations in the field or laboratory. Examples of soil physical properties include percent clay, organic matter, saturated hydraulic conductivity, available water capacity, and bulk density.

Organic Matter

Organic matter is the plant and animal residue in the soil at various stages of decomposition. The estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms. An irregular distribution of organic carbon with depth may indicate different episodes of soil deposition or soil formation. Soils that are very high in organic matter have poor engineering properties and subside upon drying.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.



Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

<= 0.50

> 0.50 and <= 1.08

> 1.08 and <= 1.42

> 1.42 and <= 2.82

> 2.82 and <= 55.00

Not rated or not available

Soil Rating Lines

<= 0.50

> 0.50 and <= 1.08

> 1.08 and <= 1.42

> 1.42 and <= 2.82

> 2.82 and <= 55.00

Not rated or not available

Soil Rating Points

<= 0.50

> 0.50 and <= 1.08

> 1.08 and <= 1.42

> 1.42 and <= 2.82

> 2.82 and <= 55.00

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cape May County, New Jersey Survey Area Data: Version 15, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 25, 2011—Mar 26, 2011

Table—Organic Matter

Map unit symbol	Map unit name	Rating (percent)	Acres in AOI	Percent of AOI
BEXAS	Berryland and Mullica soils, 0 to 2 percent slopes, occasionally flooded	2.82	36.1	33.4%
DoeBO	Downer sandy loam, 2 to 5 percent slopes, Northern Tidewater Area	1.08	4.0	3.7%
EveB	Evesboro sand, 0 to 5 percent slopes	0.25	0.0	0.0%
GamB	Galloway loamy sand, 0 to 5 percent slopes	0.43	25.9	23.9%
HboA	Hammonton sandy loam, 0 to 2 percent slopes	1.42	12.0	11.1%
HorDr	Hooksan sand, 2 to 15 percent slopes, rarely flooded	0.50	0.3	0.3%
PdwAv	Pawcatuck-Transquaking complex, 0 to 1 percent slopes, very frequently flooded	55.00	15.9	14.7%
UR	Urban land		12.4	11.4%
WATER	Water		1.7	1.5%
Totals for Area of Interest			108.3	100.0%

Rating Options—Organic Matter

Units of Measure: percent

Aggregation Method: Dominant Component Component Percent Cutoff: None Specified

Tie-break Rule: Higher Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): Depth Range (Weighted Average)

Top Depth: 0

Bottom Depth: 30

Units of Measure: Centimeters

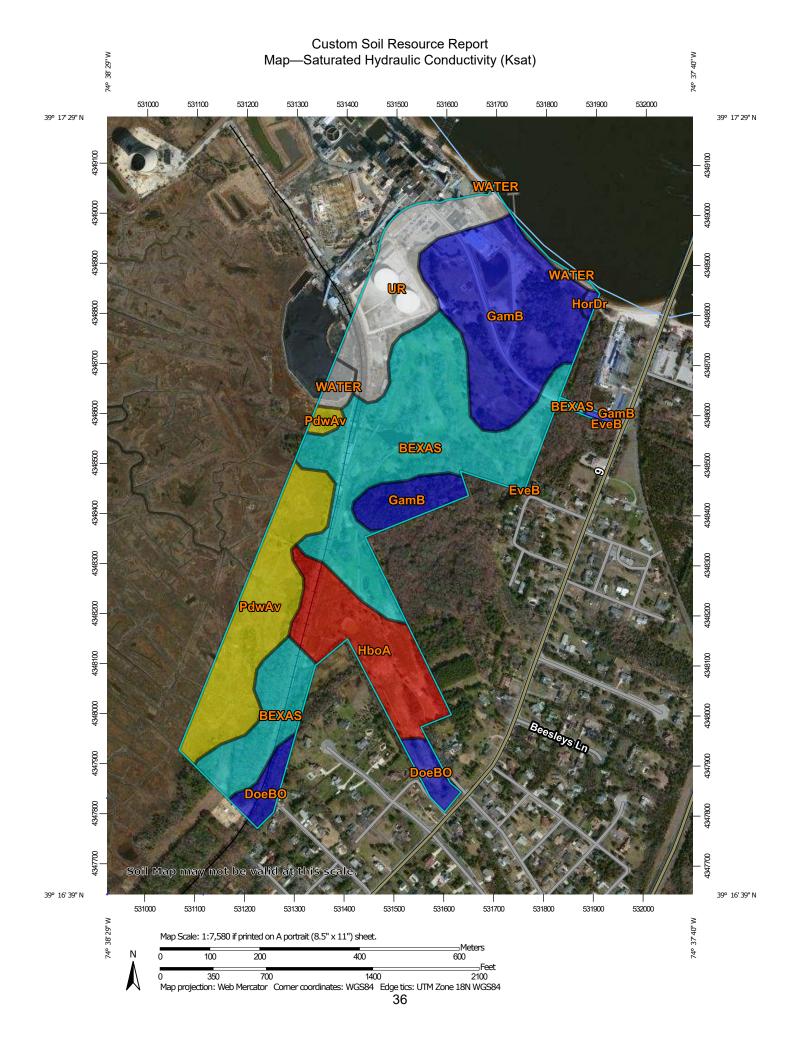
Saturated Hydraulic Conductivity (Ksat)

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates are expressed in terms of micrometers

per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity is considered in the design of soil drainage systems and septic tank absorption fields.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

The numeric Ksat values have been grouped according to standard Ksat class limits.



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Background

US Routes

Major Roads

Local Roads

Aerial Photography

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

<= 28.2300

> 28.2300 and <= 72.6900

> 72.6900 and <= 90.7993

> 90.7993 and <= 91.7400

Not rated or not available

Soil Rating Lines

<= 28.2300

> 28.2300 and <= 72.6900

> 72.6900 and <= 90.7993

> 90.7993 and <= 91.7400

Not rated or not available

Soil Rating Points

<= 28.2300

> 28.2300 and <= 72.6900

> 72.6900 and <= 90.7993

> 90.7993 and <= 91.7400

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cape May County, New Jersey Survey Area Data: Version 15, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 25, 2011—Mar 26, 2011

Table—Saturated Hydraulic Conductivity (Ksat)

Map unit symbol	Map unit name	Rating (micrometers per second)	Acres in AOI	Percent of AOI		
BEXAS	Berryland and Mullica soils, 0 to 2 percent slopes, occasionally flooded	90.7993	36.1	33.4%		
DoeBO	Downer sandy loam, 2 to 5 percent slopes, Northern Tidewater Area	91.7400	4.0	3.7%		
EveB	Evesboro sand, 0 to 5 percent slopes	91.7400	0.0	0.0%		
GamB	Galloway loamy sand, 0 to 5 percent slopes	91.7400	25.9	23.9%		
HboA	Hammonton sandy loam, 0 to 2 percent slopes	28.2300	12.0	11.1%		
HorDr	Hooksan sand, 2 to 15 percent slopes, rarely flooded	91.7400	0.3	0.3%		
PdwAv	Pawcatuck-Transquaking complex, 0 to 1 percent slopes, very frequently flooded	72.6900	15.9	14.7%		
UR	Urban land		12.4	11.4%		
WATER	Water		1.7	1.5%		
Totals for Area of Interest			108.3	100.0%		

Rating Options—Saturated Hydraulic Conductivity (Ksat)

Units of Measure: micrometers per second
Aggregation Method: Dominant Component
Component Percent Cutoff: None Specified

Tie-break Rule: Fastest
Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): Depth Range (Weighted Average)

Top Depth: 0

Bottom Depth: 30

Units of Measure: Centimeters

Surface Texture

This displays the representative texture class and modifier of the surface horizon.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."



Area of Interest (AOI)

Area of Interest (AOI)

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US Routes

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Background

Major Roads Local Roads

Aerial Photography

Soils

Soil Rating Polygons

Loamy sand







Not rated or not available

Soil Rating Lines

Loamy sand



Sand



Not rated or not available

Soil Rating Points

- Loamy sand
- Mucky peat
- Sand
- Sandy loam
- Not rated or not available

Water Features



Streams and Canals

Transportation

Rails



Interstate Highways

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cape May County, New Jersey Survey Area Data: Version 15, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 25, 2011—Mar 26, 2011

Table—Surface Texture

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BEXAS	Berryland and Mullica soils, 0 to 2 percent slopes, occasionally flooded	Sand	36.1	33.4%
DoeBO	Downer sandy loam, 2 to 5 percent slopes, Northern Tidewater Area	Sandy loam	4.0	3.7%
EveB	Evesboro sand, 0 to 5 percent slopes	Sand	0.0	0.0%
GamB	Galloway loamy sand, 0 to 5 percent slopes	Loamy sand	25.9	23.9%
HboA	Hammonton sandy loam, 0 to 2 percent slopes	Sandy loam	12.0	11.1%
HorDr	Hooksan sand, 2 to 15 percent slopes, rarely flooded	Sand	0.3	0.3%
PdwAv	Pawcatuck-Transquaking complex, 0 to 1 percent slopes, very frequently flooded	Mucky peat	15.9	14.7%
UR	Urban land		12.4	11.4%
WATER	Water		1.7	1.5%
Totals for Area of Interest			108.3	100.0%

Rating Options—Surface Texture

Aggregation Method: Dominant Condition
Component Percent Cutoff: None Specified

Tie-break Rule: Lower

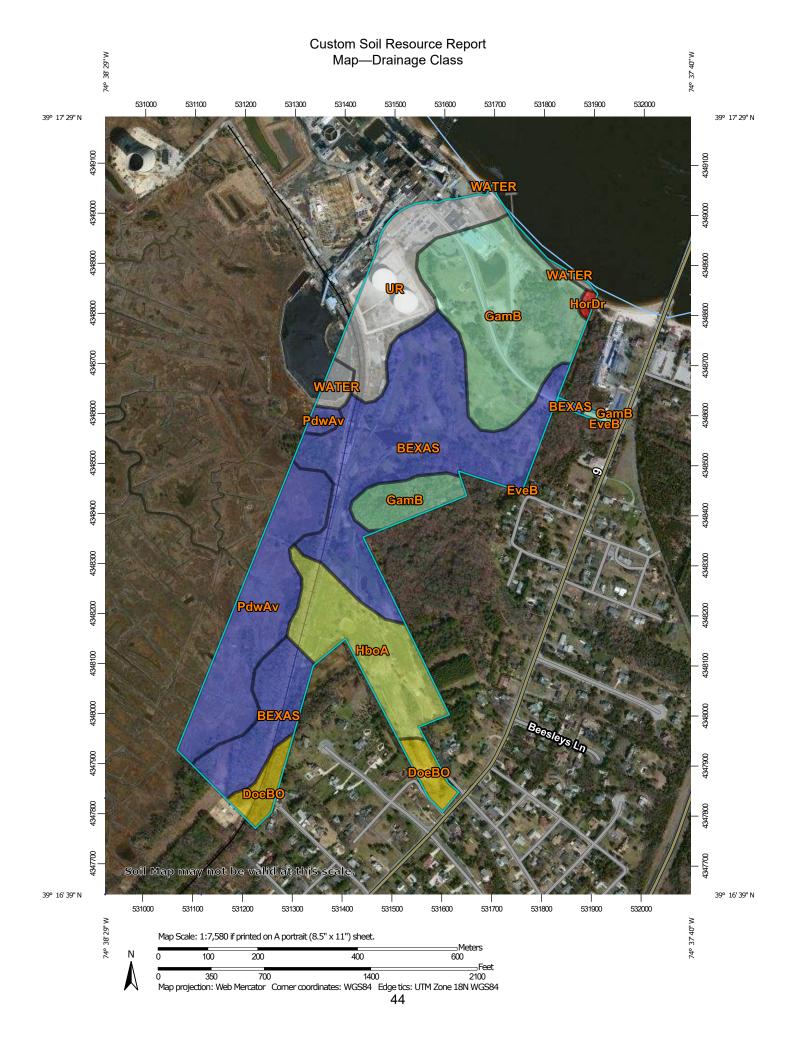
Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Drainage Class

"Drainage class (natural)" refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized-excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the "Soil Survey Manual."



Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
 - Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
 - Not rated or not available

Soil Rating Lines

- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Soil Rating Points

Excessively drained

- Somewhat excessively drained
 - Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Water Features

Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cape May County, New Jersey Survey Area Data: Version 15, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 25, 2011—Mar 26, 2011

Table—Drainage Class

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BEXAS	Berryland and Mullica soils, 0 to 2 percent slopes, occasionally flooded	Very poorly drained	36.1	33.4%
DoeBO	Downer sandy loam, 2 to 5 percent slopes, Northern Tidewater Area	Well drained	4.0	3.7%
EveB	Evesboro sand, 0 to 5 percent slopes	Excessively drained	0.0	0.0%
GamB	Galloway loamy sand, 0 to 5 percent slopes	Somewhat poorly drained	25.9	23.9%
HboA	Hammonton sandy loam, 0 to 2 percent slopes	Moderately well drained	12.0	11.1%
HorDr	Hooksan sand, 2 to 15 percent slopes, rarely flooded	Excessively drained	0.3	0.3%
PdwAv	Pawcatuck-Transquaking complex, 0 to 1 percent slopes, very frequently flooded	Very poorly drained	15.9	14.7%
UR	Urban land		12.4	11.4%
WATER	Water		1.7	1.5%
Totals for Area of Interest			108.3	100.0%

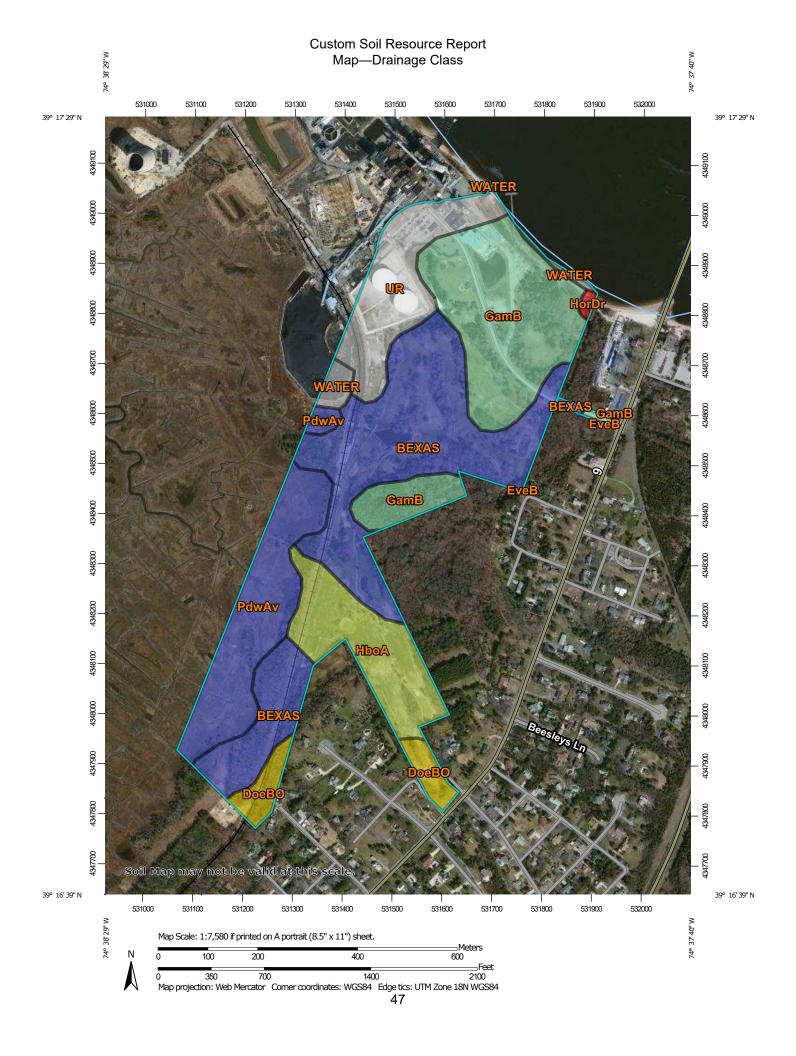
Rating Options—Drainage Class

Aggregation Method: Dominant Condition
Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Drainage Class

"Drainage class (natural)" refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized-excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the "Soil Survey Manual."



Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
 - Not rated or not available

Soil Rating Lines

- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Soil Rating Points

Excessively drained

- Somewhat excessively drained
 - Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Water Features

Streams and Canals

Transportation

- +++ Rails
- Interstate Highways
- US Routes
- Major Roads
 - Local Roads

Background

00

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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Date(s) aerial images were photographed: Mar 25, 2011—Mar 26, 2011

Table—Drainage Class

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BEXAS	Berryland and Mullica soils, 0 to 2 percent slopes, occasionally flooded	Very poorly drained	36.1	33.4%
DoeBO	Downer sandy loam, 2 to 5 percent slopes, Northern Tidewater Area	Well drained	4.0	3.7%
EveB	Evesboro sand, 0 to 5 percent slopes	Excessively drained	0.0	0.0%
GamB	Galloway loamy sand, 0 to 5 percent slopes	Somewhat poorly drained	25.9	23.9%
HboA	Hammonton sandy loam, 0 to 2 percent slopes	Moderately well drained	12.0	11.1%
HorDr	Hooksan sand, 2 to 15 percent slopes, rarely flooded	Excessively drained	0.3	0.3%
PdwAv	Pawcatuck-Transquaking complex, 0 to 1 percent slopes, very frequently flooded	Very poorly drained	15.9	14.7%
UR	Urban land		12.4	11.4%
WATER	Water		1.7	1.5%
Totals for Area of Interest			108.3	100.0%

Rating Options—Drainage Class

Aggregation Method: Dominant Condition
Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.



MAP LEGEND MAP INFORMATION Area of Interest (AOI) С The soil surveys that comprise your AOI were mapped at 1:24.000. Area of Interest (AOI) C/D Soils D Warning: Soil Map may not be valid at this scale. Soil Rating Polygons Not rated or not available Α Enlargement of maps beyond the scale of mapping can cause **Water Features** A/D misunderstanding of the detail of mapping and accuracy of soil Streams and Canals line placement. The maps do not show the small areas of В contrasting soils that could have been shown at a more detailed Transportation scale. B/D Rails ---Interstate Highways Please rely on the bar scale on each map sheet for map C/D **US Routes** measurements. Major Roads Source of Map: Natural Resources Conservation Service Not rated or not available Local Roads Web Soil Survey URL: -Coordinate System: Web Mercator (EPSG:3857) Soil Rating Lines Background Aerial Photography Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required. This product is generated from the USDA-NRCS certified data as of the version date(s) listed below. Soil Survey Area: Cape May County, New Jersey Not rated or not available Survey Area Data: Version 15, Sep 16, 2019 **Soil Rating Points** Soil map units are labeled (as space allows) for map scales Α 1:50.000 or larger. A/D Date(s) aerial images were photographed: Mar 25, 2011—Mar 26. 2011 B/D The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor

shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BEXAS	Berryland and Mullica soils, 0 to 2 percent slopes, occasionally flooded	A/D	36.1	33.4%
DoeBO	Downer sandy loam, 2 to 5 percent slopes, Northern Tidewater Area	A	4.0	3.7%
EveB	Evesboro sand, 0 to 5 percent slopes	А	0.0	0.0%
GamB	Galloway loamy sand, 0 to 5 percent slopes	A/D	25.9	23.9%
HboA	Hammonton sandy loam, 0 to 2 percent slopes	В	12.0	11.1%
HorDr	Hooksan sand, 2 to 15 percent slopes, rarely flooded	A	0.3	0.3%
PdwAv	Pawcatuck-Transquaking complex, 0 to 1 percent slopes, very frequently flooded	D	15.9	14.7%
UR	Urban land		12.4	11.4%
WATER	Water		1.7	1.5%
Totals for Area of Interest			108.3	100.0%

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition
Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Water Features

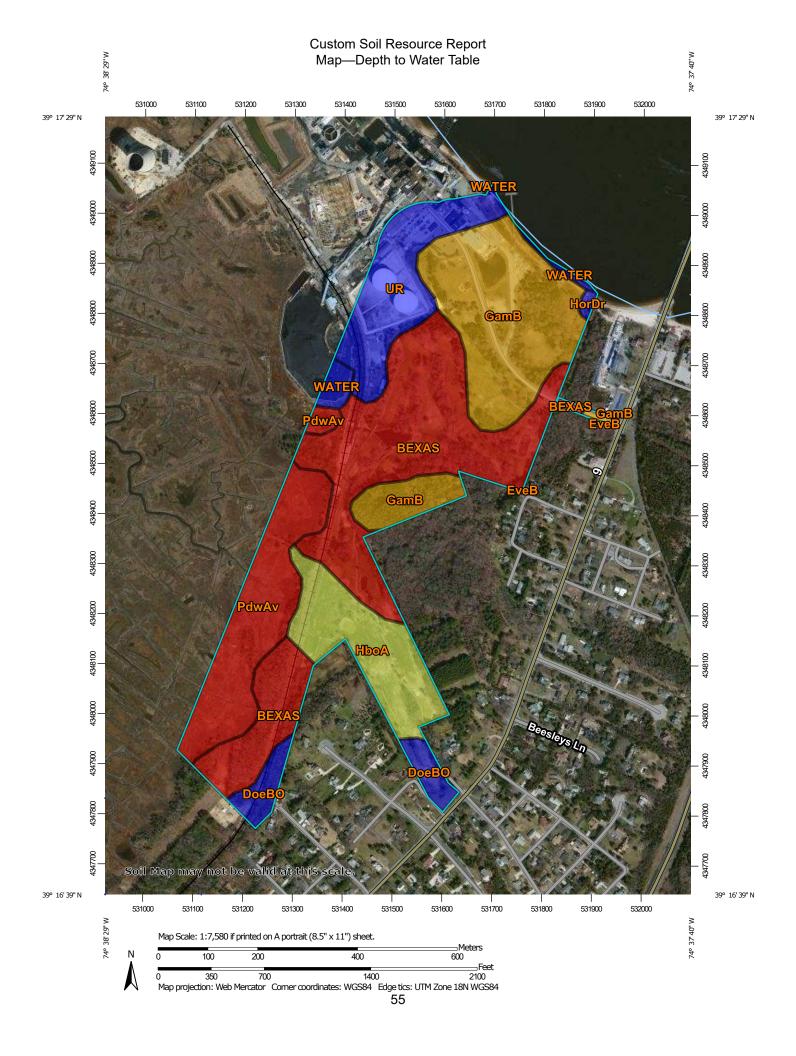
Water Features include ponding frequency, flooding frequency, and depth to water table.

Depth to Water Table

"Water table" refers to a saturated zone in the soil. It occurs during specified months. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors

(redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.



Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

> 200

Not rated or not available

■ Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

Soil Rating Lines

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

---- > 200

Not rated or not available

Soil Rating Points

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

> 200

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

Warning: Soil Map may not be valid at this scale.

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Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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Soil Survey Area: Cape May County, New Jersey Survey Area Data: Version 15, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 25, 2011—Mar 26, 2011

Table—Depth to Water Table

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
BEXAS	Berryland and Mullica soils, 0 to 2 percent slopes, occasionally flooded	0	36.1	33.4%
DoeBO	Downer sandy loam, 2 to 5 percent slopes, Northern Tidewater Area	>200	4.0	3.7%
EveB	Evesboro sand, 0 to 5 percent slopes	>200	0.0	0.0%
GamB	Galloway loamy sand, 0 to 5 percent slopes	38	25.9	23.9%
HboA	Hammonton sandy loam, 0 to 2 percent slopes	76	12.0	11.1%
HorDr	Hooksan sand, 2 to 15 percent slopes, rarely flooded	228	0.3	0.3%
PdwAv	Pawcatuck-Transquaking complex, 0 to 1 percent slopes, very frequently flooded	0	15.9	14.7%
UR	Urban land	>200	12.4	11.4%
WATER	Water	>200	1.7	1.5%
Totals for Area of Interest			108.3	100.0%

Rating Options—Depth to Water Table

Units of Measure: centimeters

Aggregation Method: Dominant Component Component Percent Cutoff: None Specified

Tie-break Rule: Lower
Interpret Nulls as Zero: No
Beginning Month: January
Ending Month: December

Flooding Frequency Class

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent.

"None" means that flooding is not probable. The chance of flooding is nearly 0 percent in any year. Flooding occurs less than once in 500 years.

"Very rare" means that flooding is very unlikely but possible under extremely unusual weather conditions. The chance of flooding is less than 1 percent in any year.

"Rare" means that flooding is unlikely but possible under unusual weather conditions. The chance of flooding is 1 to 5 percent in any year.

"Occasional" means that flooding occurs infrequently under normal weather conditions. The chance of flooding is 5 to 50 percent in any year.

"Frequent" means that flooding is likely to occur often under normal weather conditions. The chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year.

"Very frequent" means that flooding is likely to occur very often under normal weather conditions. The chance of flooding is more than 50 percent in all months of any year.



MAP LEGEND

Area of Interest (AOI) Not rated or not available Area of Interest (AOI) **Water Features** Soils Streams and Canals Soil Rating Polygons Transportation None Rails +++ Very Rare Interstate Highways Rare **US Routes** Occasional Maior Roads Frequent Local Roads Very Frequent Background Aerial Photography Not rated or not available Soil Rating Lines None Very Rare Rare Occasional Frequent Very Frequent Not rated or not available Soil Rating Points None Very Rare Rare Occasional

Frequent

Very Frequent

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

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Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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Table—Flooding Frequency Class

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BEXAS	Berryland and Mullica soils, 0 to 2 percent slopes, occasionally flooded	Occasional	36.1	33.4%
DoeBO	Downer sandy loam, 2 to 5 percent slopes, Northern Tidewater Area	None	4.0	3.7%
EveB	Evesboro sand, 0 to 5 percent slopes	None	0.0	0.0%
GamB	Galloway loamy sand, 0 to 5 percent slopes	None	25.9	23.9%
HboA	Hammonton sandy loam, 0 to 2 percent slopes	None	12.0	11.1%
HorDr	Hooksan sand, 2 to 15 percent slopes, rarely flooded	Rare	0.3	0.3%
PdwAv	Pawcatuck-Transquaking complex, 0 to 1 percent slopes, very frequently flooded	Very frequent	15.9	14.7%
UR	Urban land	None	12.4	11.4%
WATER	Water	None	1.7	1.5%
Totals for Area of Interest			108.3	100.0%

Rating Options—Flooding Frequency Class

Aggregation Method: Dominant Condition
Component Percent Cutoff: None Specified

Tie-break Rule: More Frequent Beginning Month: January Ending Month: December

Ponding Frequency Class

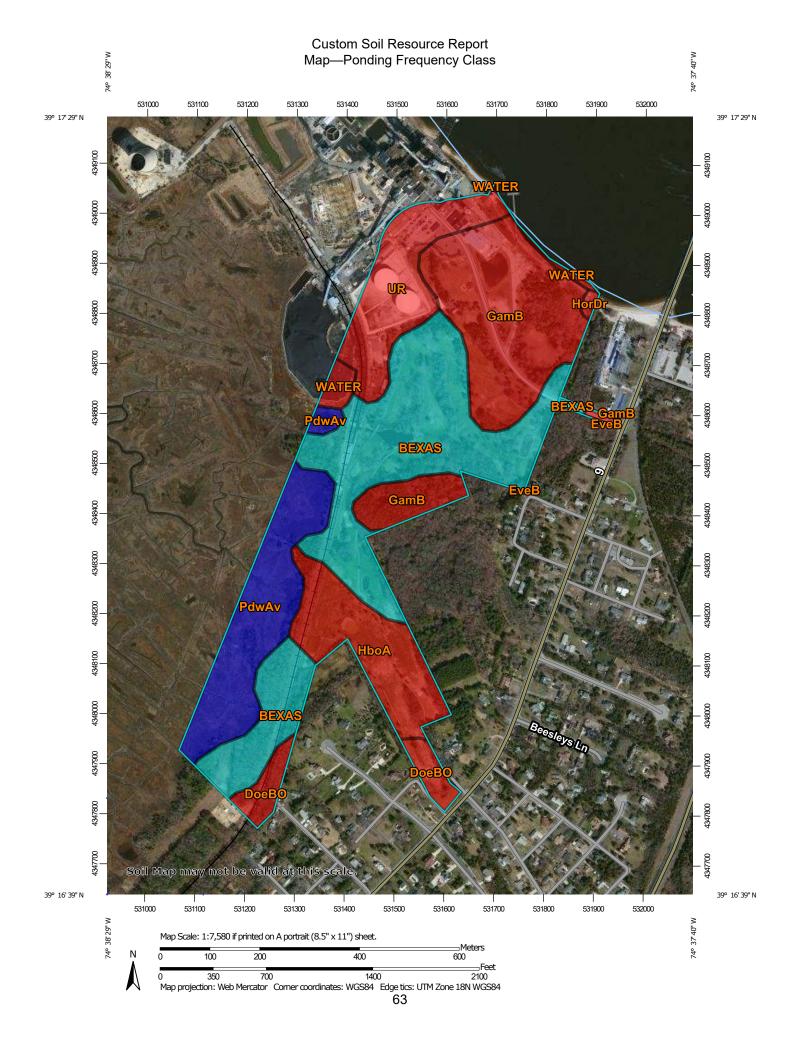
Ponding is standing water in a closed depression. The water is removed only by deep percolation, transpiration, or evaporation or by a combination of these processes. Ponding frequency classes are based on the number of times that ponding occurs over a given period. Frequency is expressed as none, rare, occasional, and frequent.

"None" means that ponding is not probable. The chance of ponding is nearly 0 percent in any year.

"Rare" means that ponding is unlikely but possible under unusual weather conditions. The chance of ponding is nearly 0 percent to 5 percent in any year.

"Occasional" means that ponding occurs, on the average, once or less in 2 years. The chance of ponding is 5 to 50 percent in any year.

"Frequent" means that ponding occurs, on the average, more than once in 2 years. The chance of ponding is more than 50 percent in any year.



MAP LEGEND

Area of Interest (AOI)

Soils

Area of Interest (AOI)

US Routes

Major Roads

-

Local Roads

Background



Aerial Photography

Occasional

Not rated or not available

Frequent

Soil Rating Polygons

None

Rare

Soil Rating Lines

- None
- Rare
- Occasional
- Frequent
- Not rated or not available

Soil Rating Points

- None
- Rare
- Occasional
- Frequent
- Not rated or not available

Water Features



Streams and Canals

Transportation

Rails



Interstate Highways

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

Warning: Soil Map may not be valid at this scale.

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Source of Map: Natural Resources Conservation Service Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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Date(s) aerial images were photographed: Mar 25, 2011—Mar 26. 2011

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Table—Ponding Frequency Class

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BEXAS	Berryland and Mullica soils, 0 to 2 percent slopes, occasionally flooded	Occasional	36.1	33.4%
DoeBO	Downer sandy loam, 2 to 5 percent slopes, Northern Tidewater Area	None	4.0	3.7%
EveB	Evesboro sand, 0 to 5 percent slopes	None	0.0	0.0%
GamB	Galloway loamy sand, 0 to 5 percent slopes	None	25.9	23.9%
HboA	Hammonton sandy loam, 0 to 2 percent slopes	None	12.0	11.1%
HorDr	Hooksan sand, 2 to 15 percent slopes, rarely flooded	None	0.3	0.3%
PdwAv	Pawcatuck-Transquaking complex, 0 to 1 percent slopes, very frequently flooded	Frequent	15.9	14.7%
UR	Urban land	None	12.4	11.4%
WATER	Water	None	1.7	1.5%
Totals for Area of Interest			108.3	100.0%

Rating Options—Ponding Frequency Class

Aggregation Method: Dominant Condition
Component Percent Cutoff: None Specified

Tie-break Rule: More Frequent

Beginning Month: January
Ending Month: December

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Natural

Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Cape May County, New Jersey



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2 053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

▲ Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

PLEGEND

Spoil Area

Stony Spot

Yery Stony Spot

Wet Spot

∆ Other

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

00

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cape May County, New Jersey Survey Area Data: Version 15, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 25, 2011—Mar 26, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AptAv	Appoquinimink-Transquaking- Mispillion complex, 0 to 1 percent slopes, very frequently flooded	0.7	1.6%
PdwAv	Pawcatuck-Transquaking complex, 0 to 1 percent slopes, very frequently flooded	11.8	27.5%
UR	Urban land	16.3	38.0%
USPSAS	Urban land-Psamments, sulfidic substratum complex, 0 to 2 percent slopes, occasionally flooded	13.6	31.8%
WATER	Water	0.5	1.1%
Totals for Area of Interest		42.9	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor

components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An association is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Cape May County, New Jersey

AptAv—Appoquinimink-Transquaking-Mispillion complex, 0 to 1 percent slopes, very frequently flooded

Map Unit Setting

National map unit symbol: v4q8

Elevation: 10 to 120 feet

Mean annual precipitation: 28 to 59 inches Mean annual air temperature: 46 to 79 degrees F

Frost-free period: 161 to 231 days

Farmland classification: Farmland of unique importance

Map Unit Composition

Appoquinimink, very frequently flooded, and similar soils: 40 percent Transquaking, very frequently flooded, and similar soils: 30 percent Mispillion, very frequently flooded, and similar soils: 25 percent

Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Appoquinimink, Very Frequently Flooded

Setting

Landform: Tidal marshes

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf

Down-slope shape: Linear Across-slope shape: Concave

Parent material: Loamy fluviomarine deposits over herbaceous organic material

Typical profile

Ag - 0 to 12 inches: mucky silt loam Cg - 12 to 30 inches: silt loam Oe - 30 to 80 inches: mucky peat

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to

high (0.20 to 2.00 in/hr)

Depth to water table: About 0 inches Frequency of flooding: Very frequent Frequency of ponding: Frequent

Salinity, maximum in profile: Strongly saline (16.0 to 32.0 mmhos/cm) Available water storage in profile: Very high (about 17.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8w

Hydrologic Soil Group: B/D Hydric soil rating: Yes

Description of Transquaking, Very Frequently Flooded

Setting

Landform: Tidal marshes

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Dip

Down-slope shape: Linear Across-slope shape: Linear

Parent material: Herbaceous organic material over loamy

Typical profile

Oe - 0 to 14 inches: mucky peat Oa - 14 to 60 inches: muck Cg - 60 to 90 inches: silty clay

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to

moderately high (0.06 to 0.20 in/hr) Depth to water table: About 0 inches Frequency of flooding: Very frequent Frequency of ponding: Frequent

Salinity, maximum in profile: Moderately saline to strongly saline (8.0 to 32.0

mmhos/cm)

Available water storage in profile: Very high (about 26.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8w

Hydrologic Soil Group: B/D Hydric soil rating: Yes

Description of Mispillion, Very Frequently Flooded

Setting

Landform: Tidal marshes

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf

Down-slope shape: Linear Across-slope shape: Concave

Parent material: Herbaceous organic material over loamy marine deposits and/or

loamy fluviomarine deposits

Typical profile

Oe - 0 to 10 inches: mucky peat Oa - 10 to 26 inches: muck Ca - 26 to 90 inches: silt loam

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20

to 0.60 in/hr)

Depth to water table: About 0 inches Frequency of flooding: Very frequent Frequency of ponding: Frequent

Salinity, maximum in profile: Moderately saline to strongly saline (8.0 to 16.0

mmhos/cm)

Available water storage in profile: Very high (about 15.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8w

Hydrologic Soil Group: C/D Hydric soil rating: Yes

Minor Components

Hammonton

Percent of map unit: 5 percent Landform: Flats, depressions

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope

Down-slope shape: Linear, concave Across-slope shape: Linear, concave

Hydric soil rating: No

PdwAv—Pawcatuck-Transquaking complex, 0 to 1 percent slopes, very frequently flooded

Map Unit Setting

National map unit symbol: v4qf

Elevation: 20 to 30 feet

Mean annual precipitation: 28 to 59 inches Mean annual air temperature: 46 to 79 degrees F

Frost-free period: 161 to 231 days

Farmland classification: Farmland of unique importance

Map Unit Composition

Pawcatuck, very frequently flooded, and similar soils: 60 percent Transquaking, very frequently flooded, and similar soils: 25 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pawcatuck, Very Frequently Flooded

Setting

Landform: Tidal marshes Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Herbaceous organic material over sandy marine deposits

Typical profile

Oe1 - 0 to 14 inches: mucky peat Oe2 - 14 to 45 inches: mucky peat Cg1 - 45 to 50 inches: loamy sand Cg2 - 50 to 90 inches: sand

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to

very high (0.57 to 19.98 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: Very frequent

Frequency of ponding: Frequent

Salinity, maximum in profile: Very slightly saline to strongly saline (2.0 to 32.0

mmhos/cm)

Available water storage in profile: Very high (about 13.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8w

Hydrologic Soil Group: D Hydric soil rating: Yes

Description of Transquaking, Very Frequently Flooded

Setting

Landform: Tidal marshes Down-slope shape: Linear Across-slope shape: Linear

Parent material: Herbaceous organic material over loamy

Typical profile

Oi - 0 to 14 inches: peat

Oe - 14 to 48 inches: mucky peat Oa - 48 to 57 inches: muck Cg - 57 to 72 inches: silty clay

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to

moderately high (0.06 to 0.20 in/hr) Depth to water table: About 0 inches Frequency of flooding: Very frequent Frequency of ponding: Frequent

Salinity, maximum in profile: Moderately saline to strongly saline (8.0 to 32.0

mmhos/cm)

Available water storage in profile: Very high (about 26.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8w

Hydrologic Soil Group: A/D Hydric soil rating: Yes

Minor Components

Berryland, frequently flooded

Percent of map unit: 5 percent

Landform: Flats

Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

Appoquinimink, very frequently flooded

Percent of map unit: 5 percent

Landform: Tidal marshes

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf

Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

Mullica, rarely flooded

Percent of map unit: 5 percent

Landform: Flats

Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

UR—Urban land

Map Unit Setting

National map unit symbol: t0vn

Elevation: 0 to 170 feet

Mean annual precipitation: 30 to 64 inches Mean annual air temperature: 46 to 79 degrees F

Frost-free period: 131 to 178 days

Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 95 percent
Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Parent material: Surface covered by pavement, concrete, buildings, and other structures underlain by disturbed and natural soil material

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8s

Hydric soil rating: Unranked

Minor Components

Udorthents

Percent of map unit: 5 percent

Landform: Low hills
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

USPSAS—Urban land-Psamments, sulfidic substratum complex, 0 to 2 percent slopes, occasionally flooded

Map Unit Setting

National map unit symbol: 2xhpb

Elevation: 0 to 30 feet

Mean annual precipitation: 41 to 50 inches Mean annual air temperature: 46 to 58 degrees F

Frost-free period: 190 to 260 days

Farmland classification: Not prime farmland

Map Unit Composition

Urban land, sulfidic substratum, occas. flooded: 60 percent

Psamments, sulfidic substratum, occas. flooded, and similar soils: 30 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land, Sulfidic Substratum, Occas. Flooded

Properties and qualities

Slope: 0 to 2 percent Runoff class: Very high

Frequency of flooding: Occasional

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8s

Hydric soil rating: No

Description of Psamments, Sulfidic Substratum, Occas. Flooded

Setting

Landform: Flats

Landform position (two-dimensional): Footslope Landform position (three-dimensional): Talf

Down-slope shape: Linear Across-slope shape: Linear

Parent material: Sandy human-transported material

Typical profile

^A - 0 to 12 inches: coarse sand

^C - 12 to 36 inches: gravelly coarse sand

^Cse - 36 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Moderately well drained

Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00

to 20.00 in/hr)

Depth to water table: About 18 to 42 inches

Frequency of flooding: Occasional Frequency of ponding: None

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0

mmhos/cm)

Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: A Hydric soil rating: No

Minor Components

Transquaking, very frequently flooded

Percent of map unit: 5 percent Landform: Tidal marshes

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Talf

Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

Appoquinimink, very frequently flooded

Percent of map unit: 5 percent Landform: Tidal marshes

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Talf

Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

WATER—Water

Map Unit Setting

National map unit symbol: t0vs

Mean annual precipitation: 30 to 64 inches Mean annual air temperature: 46 to 79 degrees F

Frost-free period: 131 to 178 days

Farmland classification: Not prime farmland

Map Unit Composition

Water: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Land Classifications

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Hydric Rating by Map Unit

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

Hydric (100%)

Hydric (66 to 99%)

Hydric (33 to 65%)

Hydric (1 to 32%)

Not Hydric (0%) Not rated or not available

Soil Rating Lines

Hydric (100%)

Hydric (66 to 99%)

Hydric (33 to 65%)

Hydric (1 to 32%)

Not Hydric (0%)

Not rated or not available

Soil Rating Points

Hydric (100%)

Hydric (66 to 99%)

Hydric (33 to 65%)

Hydric (1 to 32%)

Not Hydric (0%)

Not rated or not available

Streams and Canals

Water Features

Transportation

Rails

Interstate Highways

US Routes

Major Roads

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Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cape May County, New Jersey Survey Area Data: Version 15, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50.000 or larger.

Date(s) aerial images were photographed: Mar 25, 2011—Mar 26. 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
AptAv	Appoquinimink- Transquaking- Mispillion complex, 0 to 1 percent slopes, very frequently flooded	95	0.7	1.6%
PdwAv	Pawcatuck-Transquaking complex, 0 to 1 percent slopes, very frequently flooded	100	11.8	27.5%
UR	Urban land	0	16.3	38.0%
USPSAS	Urban land-Psamments, sulfidic substratum complex, 0 to 2 percent slopes, occasionally flooded	10	13.6	31.8%
WATER	Water	0	0.5	1.1%
Totals for Area of Interest			42.9	100.0%

Rating Options—Hydric Rating by Map Unit

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Physical Properties

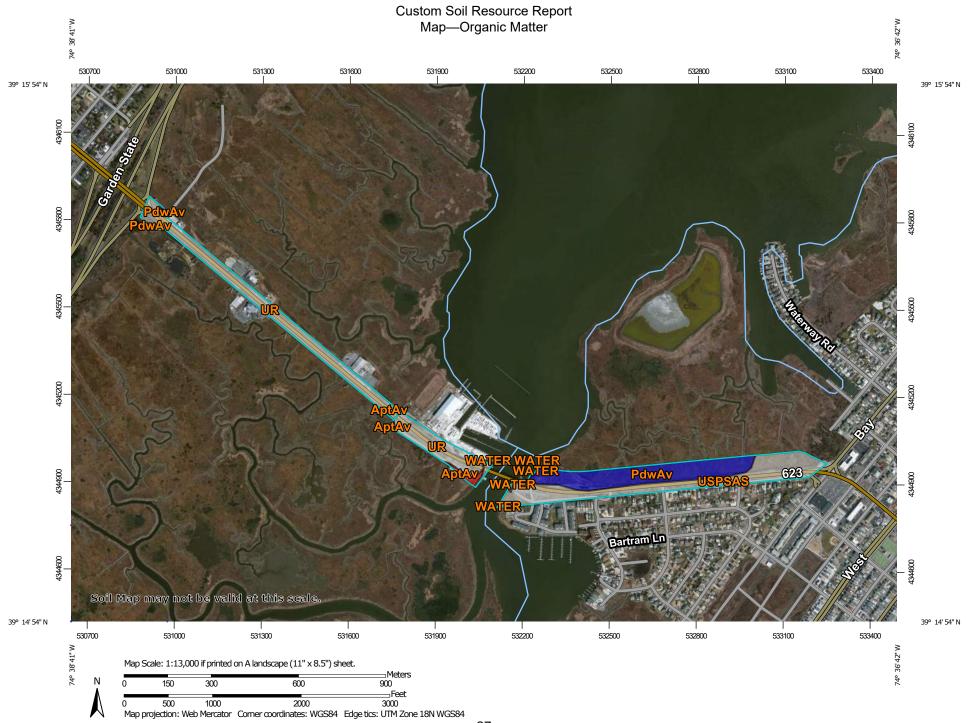
Soil Physical Properties are measured or inferred from direct observations in the field or laboratory. Examples of soil physical properties include percent clay, organic matter, saturated hydraulic conductivity, available water capacity, and bulk density.

Organic Matter

Organic matter is the plant and animal residue in the soil at various stages of decomposition. The estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms. An irregular distribution of organic carbon with depth may indicate different episodes of soil deposition or soil formation. Soils that are very high in organic matter have poor engineering properties and subside upon drying.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.



Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

<= 10.50

> 10.50 and <= 55.00

Not rated or not available

Soil Rating Lines

-

<= 10.50

-

> 10.50 and <= 55.00

أفرراهم

Not rated or not available

Soil Rating Points

<= 10.50

_

> 10.50 and <= 55.00

Not rated or not available

Water Features



Streams and Canals

Transportation

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Rails

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Interstate Highways

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US Routes

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Major Roads

Local Roads

Background

300

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cape May County, New Jersey Survey Area Data: Version 15, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 25, 2011—Mar 26, 2011

Table—Organic Matter

Map unit symbol	Map unit name	Rating (percent)	Acres in AOI	Percent of AOI
AptAv	Appoquinimink- Transquaking- Mispillion complex, 0 to 1 percent slopes, very frequently flooded	10.50	0.7	1.6%
PdwAv	Pawcatuck-Transquaking complex, 0 to 1 percent slopes, very frequently flooded	55.00	11.8	27.5%
UR	Urban land		16.3	38.0%
USPSAS	Urban land-Psamments, sulfidic substratum complex, 0 to 2 percent slopes, occasionally flooded		13.6	31.8%
WATER	Water		0.5	1.1%
Totals for Area of Interest			42.9	100.0%

Rating Options—Organic Matter

Units of Measure: percent

Aggregation Method: Dominant Component Component Percent Cutoff: None Specified

Tie-break Rule: Higher Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): Depth Range (Weighted Average)

Top Depth: 0

Bottom Depth: 30

Units of Measure: Centimeters

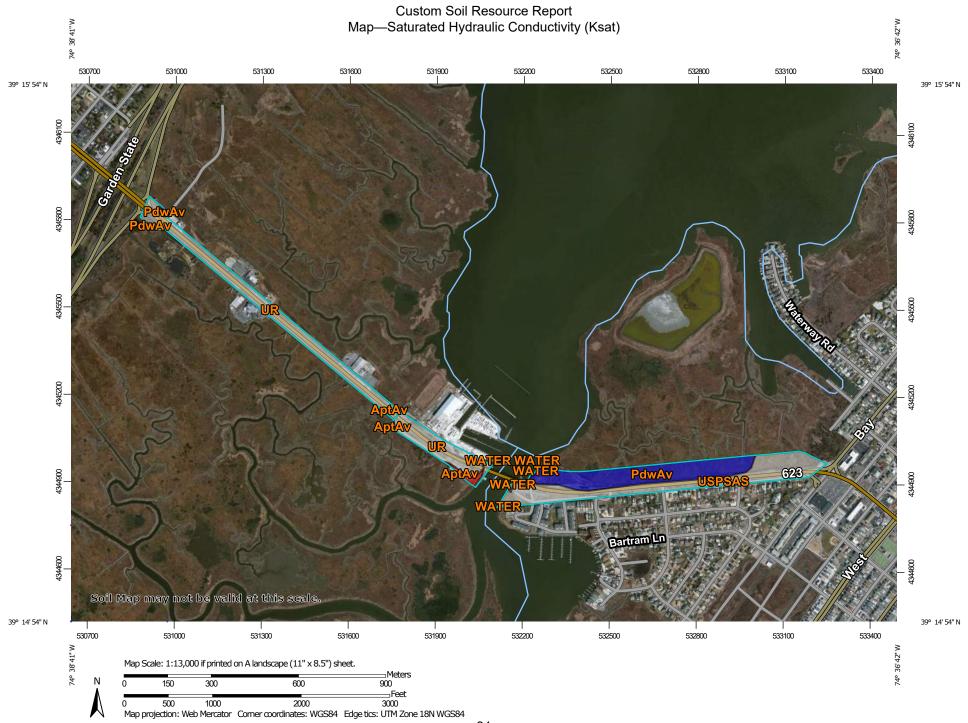
Saturated Hydraulic Conductivity (Ksat)

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity is considered in the design of soil drainage systems and septic tank absorption fields.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this

attribute for the component. For this soil property, only the representative value is used.

The numeric Ksat values have been grouped according to standard Ksat class limits.



Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

<= 7.7600

> 7.7600 and <= 72.6900

Not rated or not available

Soil Rating Lines

<= 7.7600

> 7.7600 and <= 72.6900

Not rated or not available

Soil Rating Points

<= 7.7600

> 7.7600 and <= 72.6900

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cape May County, New Jersey Survey Area Data: Version 15, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 25, 2011—Mar 26, 2011

Table—Saturated Hydraulic Conductivity (Ksat)

Map unit symbol	Map unit name	Rating (micrometers per second)	Acres in AOI	Percent of AOI
AptAv	Appoquinimink- Transquaking- Mispillion complex, 0 to 1 percent slopes, very frequently flooded	7.7600	0.7	1.6%
PdwAv	Pawcatuck-Transquaking complex, 0 to 1 percent slopes, very frequently flooded	72.6900	11.8	27.5%
UR	Urban land		16.3	38.0%
USPSAS	Urban land-Psamments, sulfidic substratum complex, 0 to 2 percent slopes, occasionally flooded		13.6	31.8%
WATER	Water		0.5	1.1%
Totals for Area of Interes	Totals for Area of Interest			100.0%

Rating Options—Saturated Hydraulic Conductivity (Ksat)

Units of Measure: micrometers per second
Aggregation Method: Dominant Component
Component Percent Cutoff: None Specified

Tie-break Rule: Fastest
Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): Depth Range (Weighted Average)

Top Depth: 0

Bottom Depth: 30

Units of Measure: Centimeters

Surface Texture

This displays the representative texture class and modifier of the surface horizon.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."



Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

Mucky peat

Not rated or not available

Soil Rating Lines

Mucky peat

Not rated or not available

Soil Rating Points

Mucky peat

Not rated or not available

Water Features

Streams and Canals

Transportation

+++ Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cape May County, New Jersey Survey Area Data: Version 15, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 25, 2011—Mar 26, 2011

Table—Surface Texture

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
AptAv	Appoquinimink- Transquaking- Mispillion complex, 0 to 1 percent slopes, very frequently flooded	Mucky peat	0.7	1.6%
PdwAv	Pawcatuck-Transquaking complex, 0 to 1 percent slopes, very frequently flooded	Mucky peat	11.8	27.5%
UR	Urban land		16.3	38.0%
USPSAS	Urban land-Psamments, sulfidic substratum complex, 0 to 2 percent slopes, occasionally flooded		13.6	31.8%
WATER	Water		0.5	1.1%
Totals for Area of Interes	est		42.9	100.0%

Rating Options—Surface Texture

Aggregation Method: Dominant Condition
Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Depth to Any Soil Restrictive Layer

A "restrictive layer" is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers.

This theme presents the depth to any type of restrictive layer that is described for each map unit. If more than one type of restrictive layer is described for an individual soil type, the depth to the shallowest one is presented. If no restrictive layer is described in a map unit, it is represented by the "> 200" depth class.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.



Not rated or not available

Streams and Canals

Interstate Highways

Aerial Photography

MAP LEGEND

Water Features

Transportation

+++

Background

Rails

US Routes

Major Roads

Local Roads

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- 0 25
- 25 50
- 50 100
- 100 150
- 150 200
- > 200
- Not rated or not available

Soil Rating Lines

- 0 25
- 25 50
- 50 100
- 100 150
- 150 200
- > 200
- Not rated or not available

Soil Rating Points

- 0 25
- 25 50
- 50 100
- 100 150
- 150 200
- > 200

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service Web Soil Survey URL:

veb Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cape May County, New Jersey Survey Area Data: Version 15, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 25, 2011—Mar 26, 2011

Table—Depth to Any Soil Restrictive Layer

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
AptAv	Appoquinimink- Transquaking- Mispillion complex, 0 to 1 percent slopes, very frequently flooded	>200	0.7	1.6%
PdwAv	Pawcatuck-Transquaking complex, 0 to 1 percent slopes, very frequently flooded	>200	11.8	27.5%
UR	Urban land	>200	16.3	38.0%
USPSAS	Urban land-Psamments, sulfidic substratum complex, 0 to 2 percent slopes, occasionally flooded	>200	13.6	31.8%
WATER	Water	>200	0.5	1.1%
Totals for Area of Interest			42.9	100.0%

Rating Options—Depth to Any Soil Restrictive Layer

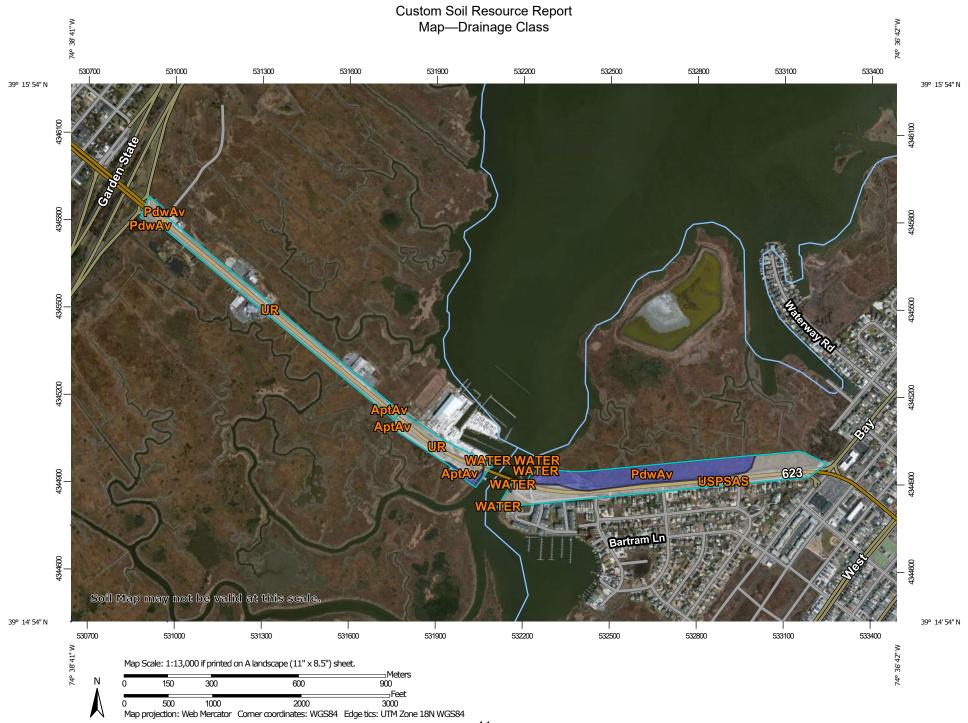
Units of Measure: centimeters

Aggregation Method: Dominant Component Component Percent Cutoff: None Specified

Tie-break Rule: Lower Interpret Nulls as Zero: No

Drainage Class

"Drainage class (natural)" refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized-excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the "Soil Survey Manual."



Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
 - Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Soil Rating Lines

- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Soil Rating Points

Excessively drained

- Somewhat excessively drained
 - Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Water Features

Streams and Canals

Transportation

- +++ Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cape May County, New Jersey Survey Area Data: Version 15, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 25, 2011—Mar 26, 2011

Table—Drainage Class

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
AptAv	Appoquinimink- Transquaking- Mispillion complex, 0 to 1 percent slopes, very frequently flooded	Very poorly drained	0.7	1.6%
PdwAv	Pawcatuck-Transquaking complex, 0 to 1 percent slopes, very frequently flooded	Very poorly drained	11.8	27.5%
UR	Urban land		16.3	38.0%
USPSAS	Urban land-Psamments, sulfidic substratum complex, 0 to 2 percent slopes, occasionally flooded		13.6	31.8%
WATER	Water		0.5	1.1%
Totals for Area of Interes	Totals for Area of Interest			100.0%

Rating Options—Drainage Class

Aggregation Method: Dominant Condition
Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.



MAP LEGEND MAP INFORMATION Area of Interest (AOI) The soil surveys that comprise your AOI were mapped at С 1:24.000. Area of Interest (AOI) C/D Soils D Warning: Soil Map may not be valid at this scale. Soil Rating Polygons Not rated or not available Α Enlargement of maps beyond the scale of mapping can cause **Water Features** A/D misunderstanding of the detail of mapping and accuracy of soil Streams and Canals line placement. The maps do not show the small areas of В contrasting soils that could have been shown at a more detailed Transportation scale. B/D Rails ---Interstate Highways Please rely on the bar scale on each map sheet for map C/D **US Routes** measurements. Major Roads Source of Map: Natural Resources Conservation Service Not rated or not available Local Roads Web Soil Survey URL: -Coordinate System: Web Mercator (EPSG:3857) Soil Rating Lines Background Aerial Photography Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required. This product is generated from the USDA-NRCS certified data as of the version date(s) listed below. Soil Survey Area: Cape May County, New Jersey Not rated or not available Survey Area Data: Version 15, Sep 16, 2019 **Soil Rating Points** Soil map units are labeled (as space allows) for map scales Α 1:50.000 or larger. A/D Date(s) aerial images were photographed: Mar 25, 2011—Mar 26. 2011 B/D The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor

shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
AptAv	Appoquinimink- Transquaking- Mispillion complex, 0 to 1 percent slopes, very frequently flooded	B/D	0.7	1.6%
PdwAv	Pawcatuck-Transquaking complex, 0 to 1 percent slopes, very frequently flooded	D	11.8	27.5%
UR	Urban land		16.3	38.0%
USPSAS	Urban land-Psamments, sulfidic substratum complex, 0 to 2 percent slopes, occasionally flooded		13.6	31.8%
WATER	Water		0.5	1.1%
Totals for Area of Interes	est		42.9	100.0%

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition Component Percent Cutoff: None Specified

Tie-break Rule: Higher

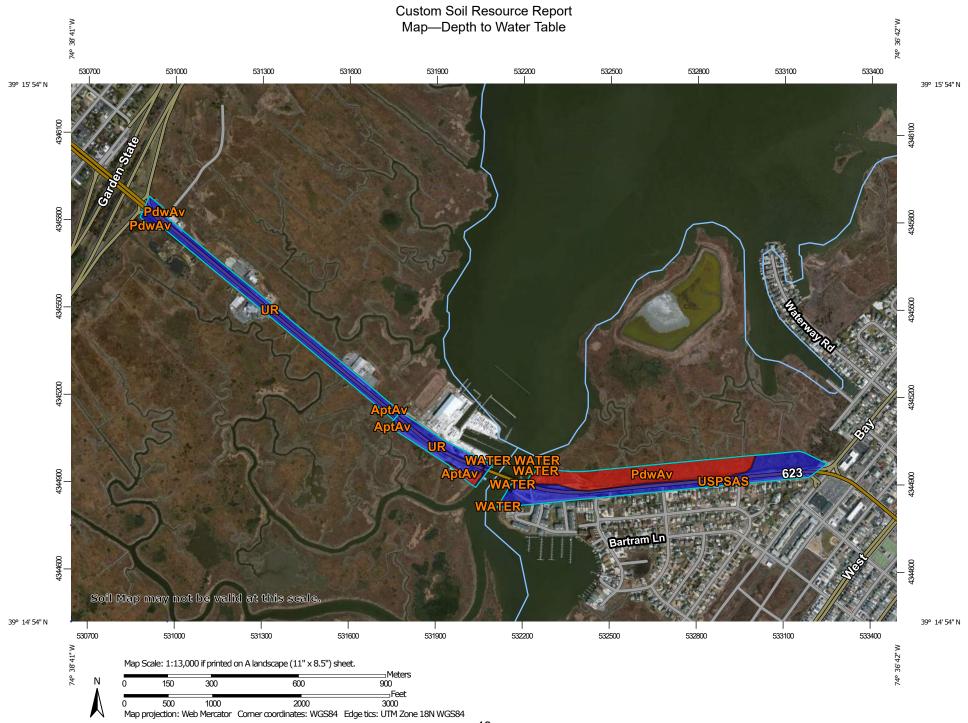
Water Features

Water Features include ponding frequency, flooding frequency, and depth to water table.

Depth to Water Table

"Water table" refers to a saturated zone in the soil. It occurs during specified months. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.



Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

> 200

Not rated or not available

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

Soil Rating Lines

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

---- > 200

Not rated or not available

Soil Rating Points

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

> 200

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cape May County, New Jersey Survey Area Data: Version 15, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 25, 2011—Mar 26, 2011

Table—Depth to Water Table

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
AptAv	Appoquinimink- Transquaking- Mispillion complex, 0 to 1 percent slopes, very frequently flooded	0	0.7	1.6%
PdwAv	Pawcatuck-Transquaking complex, 0 to 1 percent slopes, very frequently flooded	0	11.8	27.5%
UR	Urban land	>200	16.3	38.0%
USPSAS	Urban land-Psamments, sulfidic substratum complex, 0 to 2 percent slopes, occasionally flooded	>200	13.6	31.8%
WATER	Water	>200	0.5	1.1%
Totals for Area of Interest			42.9	100.0%

Rating Options—Depth to Water Table

Units of Measure: centimeters

Aggregation Method: Dominant Component Component Percent Cutoff: None Specified

Tie-break Rule: Lower
Interpret Nulls as Zero: No
Beginning Month: January
Ending Month: December

Flooding Frequency Class

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent.

"None" means that flooding is not probable. The chance of flooding is nearly 0 percent in any year. Flooding occurs less than once in 500 years.

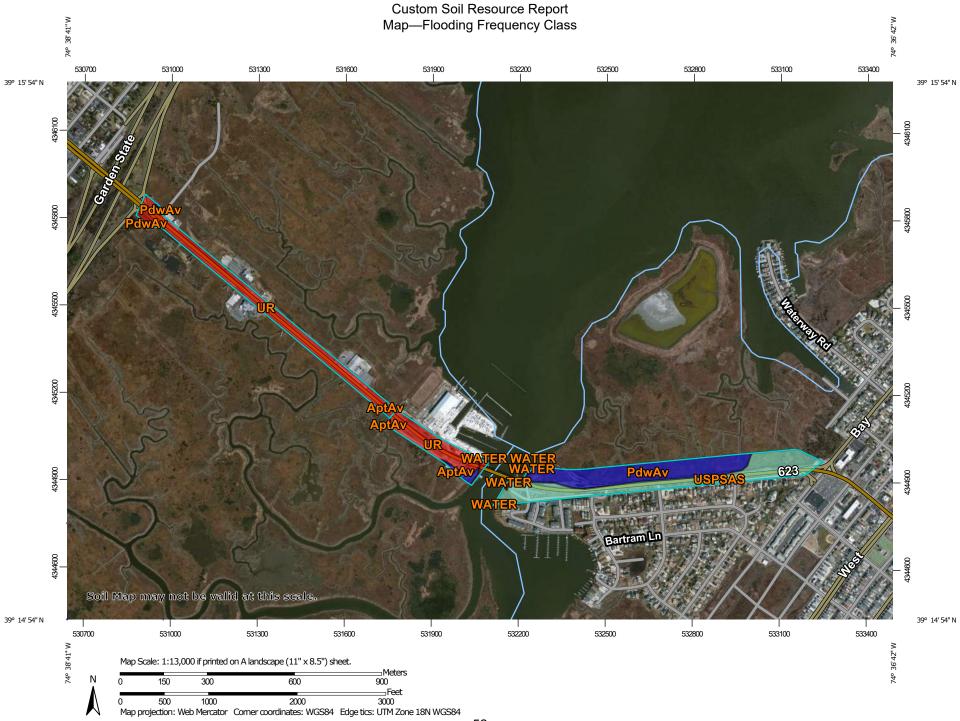
"Very rare" means that flooding is very unlikely but possible under extremely unusual weather conditions. The chance of flooding is less than 1 percent in any year.

"Rare" means that flooding is unlikely but possible under unusual weather conditions. The chance of flooding is 1 to 5 percent in any year.

"Occasional" means that flooding occurs infrequently under normal weather conditions. The chance of flooding is 5 to 50 percent in any year.

"Frequent" means that flooding is likely to occur often under normal weather conditions. The chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year.

"Very frequent" means that flooding is likely to occur very often under normal weather conditions. The chance of flooding is more than 50 percent in all months of any year.



Area of Interest (AOI) Not rated or not available Area of Interest (AOI) **Water Features** Soils Streams and Canals Soil Rating Polygons Transportation None Rails +++ Very Rare Interstate Highways Rare **US Routes** Occasional Maior Roads Frequent Local Roads Very Frequent Background Aerial Photography Not rated or not available Soil Rating Lines None Very Rare Rare Occasional Frequent Very Frequent Not rated or not available **Soil Rating Points** None Very Rare Rare

Occasional

Frequent

Very Frequent

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cape May County, New Jersey Survey Area Data: Version 15, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50.000 or larger.

Date(s) aerial images were photographed: Mar 25, 2011—Mar 26. 2011

Table—Flooding Frequency Class

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
AptAv	Appoquinimink- Transquaking- Mispillion complex, 0 to 1 percent slopes, very frequently flooded	Very frequent	0.7	1.6%
PdwAv	Pawcatuck-Transquaking complex, 0 to 1 percent slopes, very frequently flooded	Very frequent	11.8	27.5%
UR	Urban land	None	16.3	38.0%
USPSAS	Urban land-Psamments, sulfidic substratum complex, 0 to 2 percent slopes, occasionally flooded	Occasional	13.6	31.8%
WATER	Water	None	0.5	1.1%
Totals for Area of Inter	est		42.9	100.0%

Rating Options—Flooding Frequency Class

Aggregation Method: Dominant Condition
Component Percent Cutoff: None Specified

Tie-break Rule: More Frequent

Beginning Month: January
Ending Month: December

Ponding Frequency Class

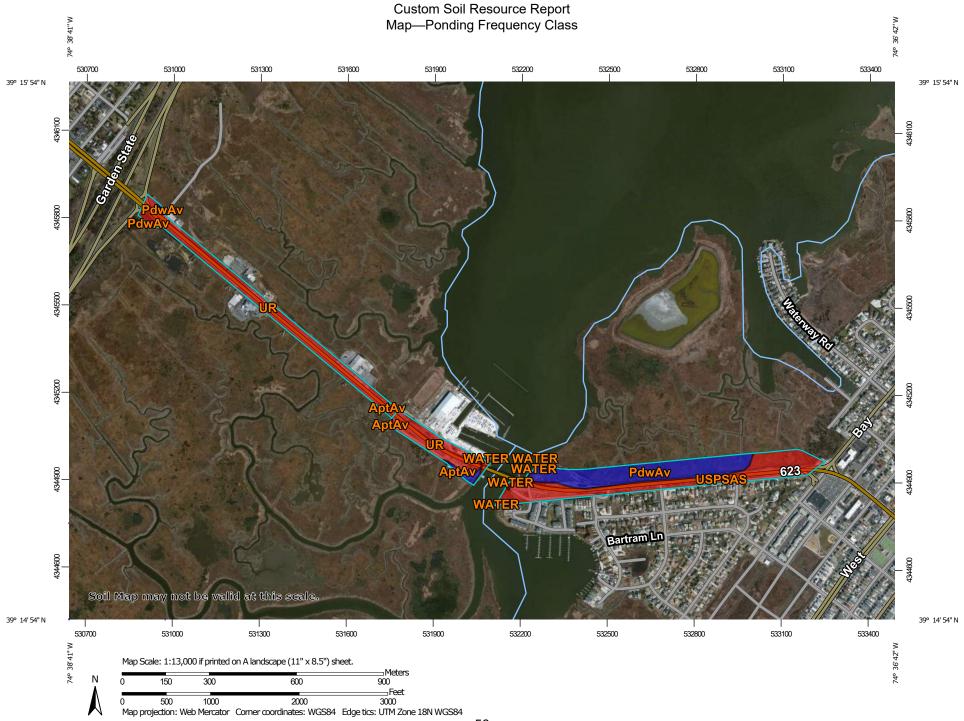
Ponding is standing water in a closed depression. The water is removed only by deep percolation, transpiration, or evaporation or by a combination of these processes. Ponding frequency classes are based on the number of times that ponding occurs over a given period. Frequency is expressed as none, rare, occasional, and frequent.

"None" means that ponding is not probable. The chance of ponding is nearly 0 percent in any year.

"Rare" means that ponding is unlikely but possible under unusual weather conditions. The chance of ponding is nearly 0 percent to 5 percent in any year.

"Occasional" means that ponding occurs, on the average, once or less in 2 years. The chance of ponding is 5 to 50 percent in any year.

"Frequent" means that ponding occurs, on the average, more than once in 2 years. The chance of ponding is more than 50 percent in any year.



Area of Interest (AOI)

Area of Interest (AOI)

US Routes

-

Major Roads Local Roads

Soil Rating Polygons

Soils

None Rare



Background

Aerial Photography

Occasional

Frequent

Not rated or not available

Soil Rating Lines

None



Rare



Occasional



Not rated or not available

Soil Rating Points

None

Rare

Occasional

Frequent

Not rated or not available

Water Features



Streams and Canals

Transportation

Rails



Interstate Highways

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cape May County, New Jersey Survey Area Data: Version 15, Sep 16, 2019

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Table—Ponding Frequency Class

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI	
AptAv	Appoquinimink- Transquaking- Mispillion complex, 0 to 1 percent slopes, very frequently flooded	Frequent	0.7	1.6%	
PdwAv	Pawcatuck-Transquaking complex, 0 to 1 percent slopes, very frequently flooded	Frequent	11.8	27.5%	
UR	Urban land	None	16.3	38.0%	
USPSAS	Urban land-Psamments, sulfidic substratum complex, 0 to 2 percent slopes, occasionally flooded	None	13.6	31.8%	
WATER	Water	None	0.5	1.1%	
Totals for Area of Intere	est	•	42.9	100.0%	

Rating Options—Ponding Frequency Class

Aggregation Method: Dominant Condition
Component Percent Cutoff: None Specified

Tie-break Rule: More Frequent

Beginning Month: January
Ending Month: December

References

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Attachment B. Site Photographs

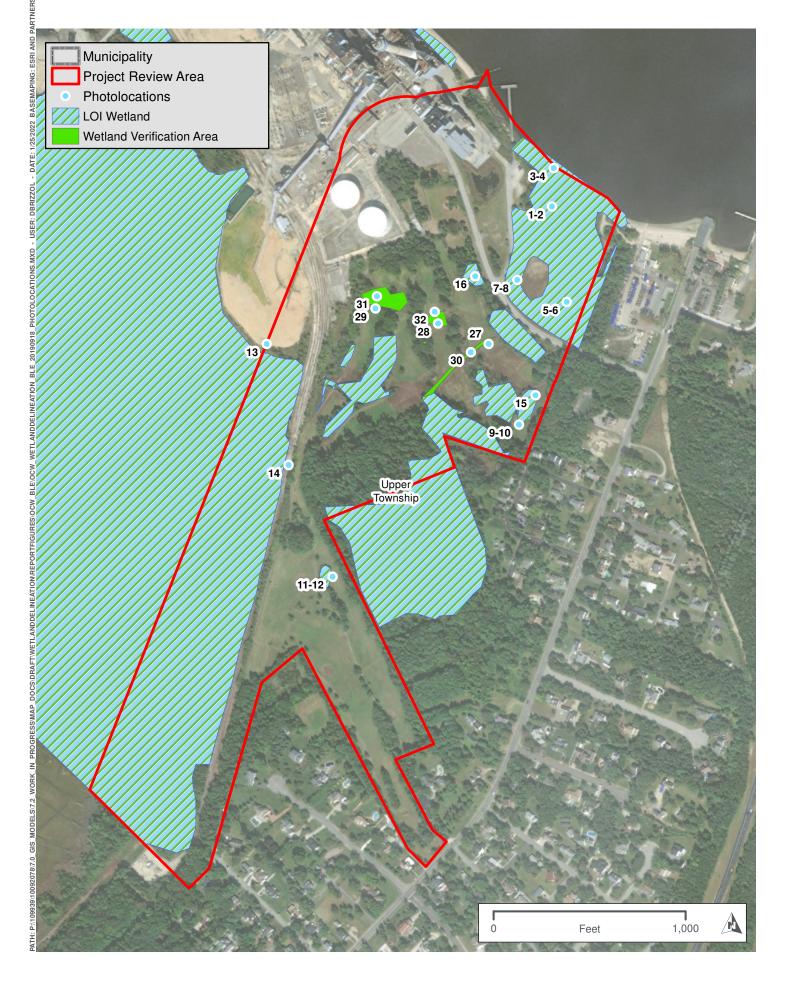






Photo 1: Photo of upland soil profile collected outside Wetland A.



Photo 2: Photo of upland vegetation outside of Wetland A.

DATE:	11/11/19	PHOTO
CREATED BY:	JC	
REVIEWED BY:	DB	1 and 2
JOB NO:	10092078	



Photo 3: Photo of Wetland A soil profile.



Photo 4: Photo of Wetland A *Phragmites australis* stands.

DATE:	11/11/19	PHOTO
CREATED BY:	JC	
REVIEWED BY:	DB	3 and 4
JOB NO:	10092078	



Photo 5: Photo of Wetland A observation 3 soil pit location.



Photo 6: Tree morphological adaptations within Wetland A.

DATE:	11/11/19	PHOTO
CREATED BY:	JC	
REVIEWED BY:	DB	5 and 6
JOB NO:	10092078	



Photo 7: Photo of Wetland B location.



Photo 8: Photo of Wetland B soil profile.

DATE:	11/11/19	PHOTO
CREATED BY:	JC	
REVIEWED BY:	DB	7 and 8
JOB NO:	10092078	



Photo 9: Photo of upland soil profile collected outside Wetland C.



Photo 10: Photo of Wetland C soil profile.

Orsted Ocean Wind Project		DATE:	11/11/19	PHOTO
	Wetland Delineation - BL England	CREATED BY:	JC	
	Photography	REVIEWED BY:	DB	9 and 10
	3 1 ,	JOB NO:	10092078	



Photo 11: Photo of Wetland D soil pit location.



Photo 12: Photo of Wetland D.

DATE:	11/11/19	PHOTO
CREATED BY:	JC	
REVIEWED BY:	ZL	11 and 12
JOB NO:	10092078	



Photo 13: Photo of wetland facing west within habitat assessment area.



Photo 14: Photo of wetland facing southwest on western area of wetland delineation.

Wetland Delineation - BL England Photography DATE: 11/11/19 PHOTO
CREATED BY: JC
REVIEWED BY: ZL
JOB NO: 10092078



Photo 15: Photo of Wetland C.



Photo 16: Wetland confirmation location on west side of LOI verification area.

DATE:	11/11/19	PHOTO
CREATED BY:	JC	
REVIEWED BY:	DB	15 and 16
JOB NO:	10092078	



Photo 17: Photo of Spartina alterniflora along Roosevelt Boulevard



Photo 18: Photo along roadside of Roosevelt Boulevard

DATE:	11/11/19	PHOTO
CREATED BY:	JC	
REVIEWED BY:	DB	17 and 18
JOB NO:	10092078	



Photo 19: Photo of WL-A-UP upland soil profile



Photo 20: Photo of WL-A-WET wetland soil profile.

DATE:	11/11/19	PHOTO
CREATED BY:	JC	
REVIEWED BY:	DB	19 and 20
JOB NO:	10092078	



Photo 21: Photo of WL-B-UP upland soil profile



Photo 22: Photo of WL-B-WET wetland soil profile.

DATE:	11/11/19	PHOTO
CREATED BY:	JC	
REVIEWED BY:	DB	21 and 22
JOB NO:	10092078	



Photo 23: Photo of WL-C-UP upland soil profile



Photo 24: Photo of WL-C-WET wetland soil profile.

DATE:	11/11/19	PHOTO
CREATED BY:	JC	
REVIEWED BY:	DB	23 and 24
JOB NO:	10092078	



Photo 25: Photo of Spartina alterniflora and Phragmites australis under Roosevelt Boulevard bridge.



Photo 26: Photo of Spartina alterniflora along Roosevelt Boulevard.

DATE:	11/11/19	PHOTO
CREATED BY:	JC	
REVIEWED BY:	DB	25 and 26
JOB NO:	10092078	



Attachment C. Letter of Interpretation (LOI) Letter and Plan



State of New Jersey

PHILIP D. MURPHY
Governor

SHEILA Y. OLIVER Lt. Governor DEPARTMENT OF ENVIRONMENTAL PROTECTION

CATHERINE R. McCABE Commissioner

Division of Land Use Regulation Mail Code 501-02A P.O. Box 420 Trenton, New Jersey 08625-0420 www.nj.gov/dep/landuse

Pete Murray c/o RC Cape May Holding LLC 900 N. Shore Road Beesley's Point, NJ 08223 MAR 1 9 2019

RE:

Freshwater Wetlands Letter of Interpretation: Line Verification

File No.: 0511-03-0011.4 Activity Number: FWW180001

Applicant: RC CAPE MAY HOLDINGS, LLC

Block(s) and Lot(s): [479, 74] [479, 76] [479, 76.01] [479, 94.01]

Upper Twp., Cape May County

Dear Mr. Murray:

This letter is in response to your request for a Letter of Interpretation to have Division of Land Use Regulation (Division) staff verify the boundary of the freshwater wetlands and/or State open waters on the referenced property.

In accordance with agreements between the State of New Jersey Department of Environmental Protection, the U.S. Army Corps of Engineers Philadelphia and New York Districts, and the U.S. Environmental Protection Agency, the NJDEP, the Division is the lead agency for establishing the extent of State and Federally regulated wetlands and waters. The USEPA and/or USACE retain the right to reevaluate and modify the jurisdictional determination at any time should the information prove to be incomplete or inaccurate.

Based upon the information submitted, and upon site inspections conducted by Division staff on November 14 and December 27, 2018, the Division has determined that the wetlands and waters boundary line(s) are accurately shown on the plan maps entitled: "PLAN OF FRESHWATER/WATERS DELINEATION, B.L. ENGLAND GENERATING STATION, TAX BLOCK 479 TAX LOTS 74, 76, 76.01 & 94.01, TOWNSHIP OF UPPER, CAPE MAY COUNTY, NEW JERSEY ", consisting of seventeen (17) sheets, (all sheets) dated October 14, 2008, (all sheets) last revised August 17, 2018, and prepared by Hyland Design Group, Inc. and further identified as:

Sheet 1 of 17 – "EXISTING CONDITIONS KEY SHEET,"
Sheets 2 through 14 of 17 – "FRESHWATER WETLANDS/WATERS DELINEATION,"
Sheets 15 through 17 of 17 – "WETLANDS/WATERS DELINEATION BEARING & DISTANCES."

The freshwater wetlands and waters boundary line(s), as determined in this letter, must be shown on any future site development plans. The line(s) should be labeled with the above file number and the following note:

"Freshwater Wetlands/Waters Boundary Line as verified by NJDEP"

Wetlands Resource Value Classification ("RVC")

In addition, the Division has determined that the resource value and the standard transition area or buffer required adjacent to the delineated wetlands are as follows:

Sheet 3 of 17:

- Ordinary: Line segments 230 through 232 and 249 through 252 [No wetland buffer].
- Exceptional: All remaining freshwater wetland <u>delineation points</u> and <u>line segments</u> shown on the approved plan sheet referenced within this verification [150 ft. wetland buffer].

Sheet 7 of 17:

- **Intermediate**: Line segments 453 through 460 [50 ft. wetland buffer].
- Exceptional: All remaining freshwater wetland <u>delineation points</u> and <u>line segments</u> shown on the approved plan sheet referenced within this verification [150 ft. wetland buffer].

Sheet 8 of 17:

- <u>Intermediate</u>: Line segments 460 through 472, 453, 473 through 486, 487 through 506, 529 through 537 [50 ft. wetland buffer].
- Exceptional: All <u>remaining</u> freshwater wetland <u>delineation points</u> and <u>line segments</u> shown on the approved plan sheet referenced within this verification [150 ft. wetland buffer].

Sheet 9 of 17:

• Exceptional: All freshwater wetland <u>delineation points</u> and <u>line segments</u> shown on the approved plan sheet referenced within this verification [150 ft. wetland buffer].

Sheet 10 of 17:

- Ordinary: Line segments 233 through 253, flag points W-453 through W-460 and W-461 through W-470 [No wetland buffer]
- Exceptional: Line segments 119 through 160, 168, 169 and 270 through 283 [150 ft. wetland buffer].
- <u>Intermediate</u>: All <u>remaining</u> freshwater wetland <u>delineation points</u> and <u>line segments</u> shown on the approved plan sheet referenced within this verification [50 ft. wetland buffer].

Sheet 11 of 17:

• Exceptional: All freshwater wetland <u>delineation points</u> and <u>line segments</u> shown on the approved plan sheet referenced within this verification [150 ft. wetland buffer].

Sheet 12 of 17:

- Ordinary: Flag points W-1011 through W-1016 [No wetland buffer]
- Intermediate: All remaining freshwater wetland <u>delineation points</u> and <u>line segments</u> shown on the approved plan sheet referenced within this verification [50 ft. wetland buffer].

Sheet 13 of 17:

- Ordinary: Flag points W-1001 through W-1011 [No wetland buffer].
- <u>Intermediate</u>: All <u>remaining</u> freshwater wetland <u>delineation points</u> and <u>line segments</u> shown on the approved plan sheet referenced within this verification [50 ft. wetland buffer].

Sheet 14 of 17:

- Intermediate: Line segments 432 through 435 [No wetland buffer].
- Exceptional: Line segments 422 through 429 [150 ft. wetland buffer].
- <u>Mapped Coastal Wetlands</u>: Line segments 430 to 431 and 436 through 443 [a buffer of up to 300 feet may be imposed].

Please be advised, there are additional mapped coastal wetlands on Block: 479, Lots: 74, 76 and 76.01 as shown on Coastal Wetlands Map #161-2004 and as such is regulated pursuant to the Coastal Wetlands Act of 1970 (N.J.S.A. 13:9A-1 et seq.). Please be advised that if the proposed project is regulated under the Rules for Coastal Zone Management (N.J.A.C. 7:7E), then a buffer of up to 300 feet may be imposed adjacent to coastal wetlands.

RVC may affect requirements for wetland and/or transition area permitting. This classification may affect the requirements for an Individual Wetlands Permit (see N.J.A.C. 7:7A-9 and 10), the types of Statewide General Permits available for the property (see N.J.A.C. 7:7A-5 and 7) and any modification available through a transition area waiver (see N.J.A.C. 7:7A-8). Please refer to the Freshwater Wetlands Protection Act (N.J.S.A. 13:9B-1 et seq.) and implementing rules for additional information.

Wetlands resource value classification is based on the best information available to the Department. The classification is subject to reevaluation at any time if additional or updated information is made available, including, but not limited to, information supplied by the applicant.

Under N.J.S.A. 13:9B-7a(2), if the Division has classified a wetland as exceptional resource value, based on a finding that the wetland is documented habitat for threatened and endangered species that remains suitable for use for breeding, resting or feeding by such species, an applicant may request a change in this classification. Such requests for a classification change must demonstrate that the habitat is no longer suitable for the documented species because there has been a change in the suitability of this habitat. Requests for resource value classification changes and associated documentation should be submitted to the Division at the address at the top of this letter.

General Information

Pursuant to the Freshwater Wetlands Protection Act Rules, you are entitled to rely upon this jurisdictional determination for a period of five years from the date of this letter unless it is determined that the letter is based on inaccurate or incomplete information. Should additional information be

disclosed or discovered, the Division reserves the right to void the original letter of interpretation and issue a revised letter of interpretation.

Regulated activities proposed within a wetland, wetland transition area or water area, as defined by N.J.A.C. 7:7A-2.2 and 2.3 of the Freshwater Wetlands Protection Act rules, require a permit from this office unless specifically exempted at N.J.A.C. 7:7A-2.4. The approved plan and supporting jurisdictional limit information are now part of the Division's public records.

This letter in no way legalizes any fill which may have been placed, or other regulated activities which may have occurred on-site. This determination of jurisdiction extent or presence does not make a finding that wetlands or water areas are "isolated" or part of a surface water tributary system unless specifically called out in this letter as such. Furthermore, obtaining this determination does not affect your responsibility to obtain any local, State, or Federal permits which may be required.

Please be advised that any surface water features on the site or adjacent to the site may possess flood hazard areas and/or riparian zones and development within these areas may be subject to the Flood Hazard Area Control Act rules at N.J.A.C. 7:13. The Division can verify the extent of flood hazard areas and/or riparian zones through a flood hazard area verification under the application procedures set forth at N.J.A.C. 7:13-5.1.

Recording

Within 90 calendar days of the date of this letter, the applicant shall submit the following information to the clerk of each county in which the site is located, and shall send proof to the Division that this information is recorded on the deed of each lot referenced in the letter of interpretation:

- 1. The Department file number for the letter of interpretation;
- 2. The approval and expiration date of the letter of interpretation;
- 3. A metes and bounds description of the wetland boundary approved under the letter of interpretation;
- 4. The width and location of any transition area approved under the letter of interpretation; and
- 5. The following statement: "The State of New Jersey has determined that all or a portion of this lot lies in a freshwater wetland and/or transition area. Certain activities in wetlands and transition areas are regulated by the New Jersey Department of Environmental Protection and some activities may be prohibited on this site or may first require a freshwater wetland permit. Contact the Division of Land Use Regulation at (609) 292-0060 or http://www.nj.gov/landuse for more information prior to any construction onsite."

Failure to have this information recorded in the deed of each lot and/or to submit proof of recording to the Division constitutes a violation of the Freshwater Wetlands Protection Act rules and may result in suspension or termination of the letter of interpretation and/or subject the applicant to enforcement action pursuant to N.J.A.C. 7:7A-22.

Appeal Process

In accordance with N.J.A.C. 7:7A-21, any person who is aggrieved by this decision may request a hearing within 30 days of the date the decision is published in the DEP Bulletin by writing to: New Jersey Department of Environmental Protection, Office of Legal Affairs, Attention: Adjudicatory Hearing

Requests, Mail Code 401-04L, P.O. Box 402, 401 East State Street, 7th Floor, Trenton, NJ 08625-0402. This request must include a completed copy of the Administrative Hearing Request Checklist found at www.state.nj.us/dep/landuse/forms. Hearing requests received after 30 days of publication notice may be denied. The DEP Bulletin is available on the Department's website at www.state.nj.us/dep/bulletin. In addition to your hearing request, you may file a request with the Office of Dispute Resolution to engage in alternative dispute resolution. Please see the website www.nj.gov/dep/odrn for more information on this process.

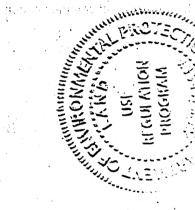
Please contact April Grabowski of our staff by e-mail at <u>April Grabowski@dep.nj.gov</u> or by phone at (609) 777-0454 should you have any questions regarding this letter. Be sure to indicate the Department's file number in all communication.

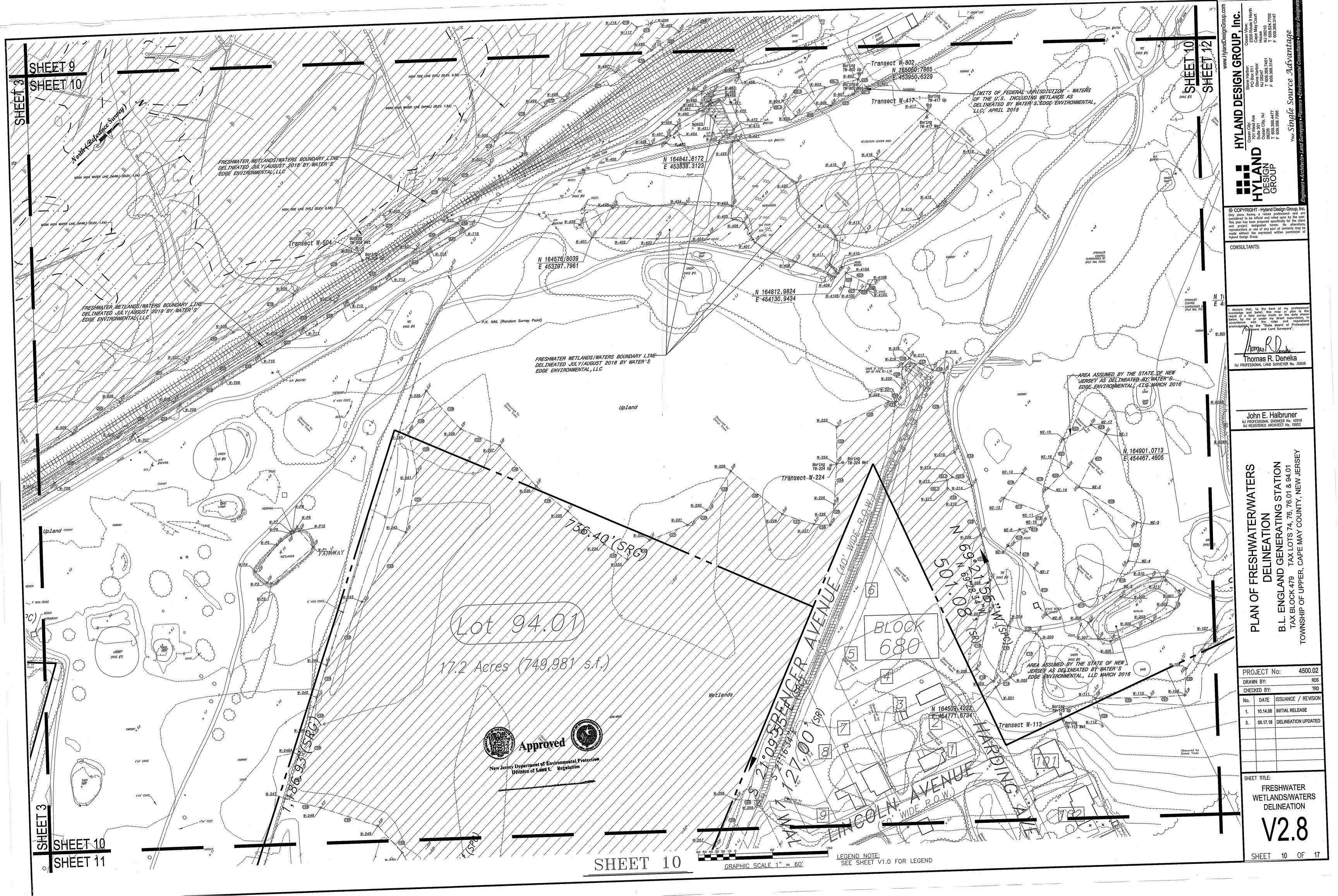
Sincerely,

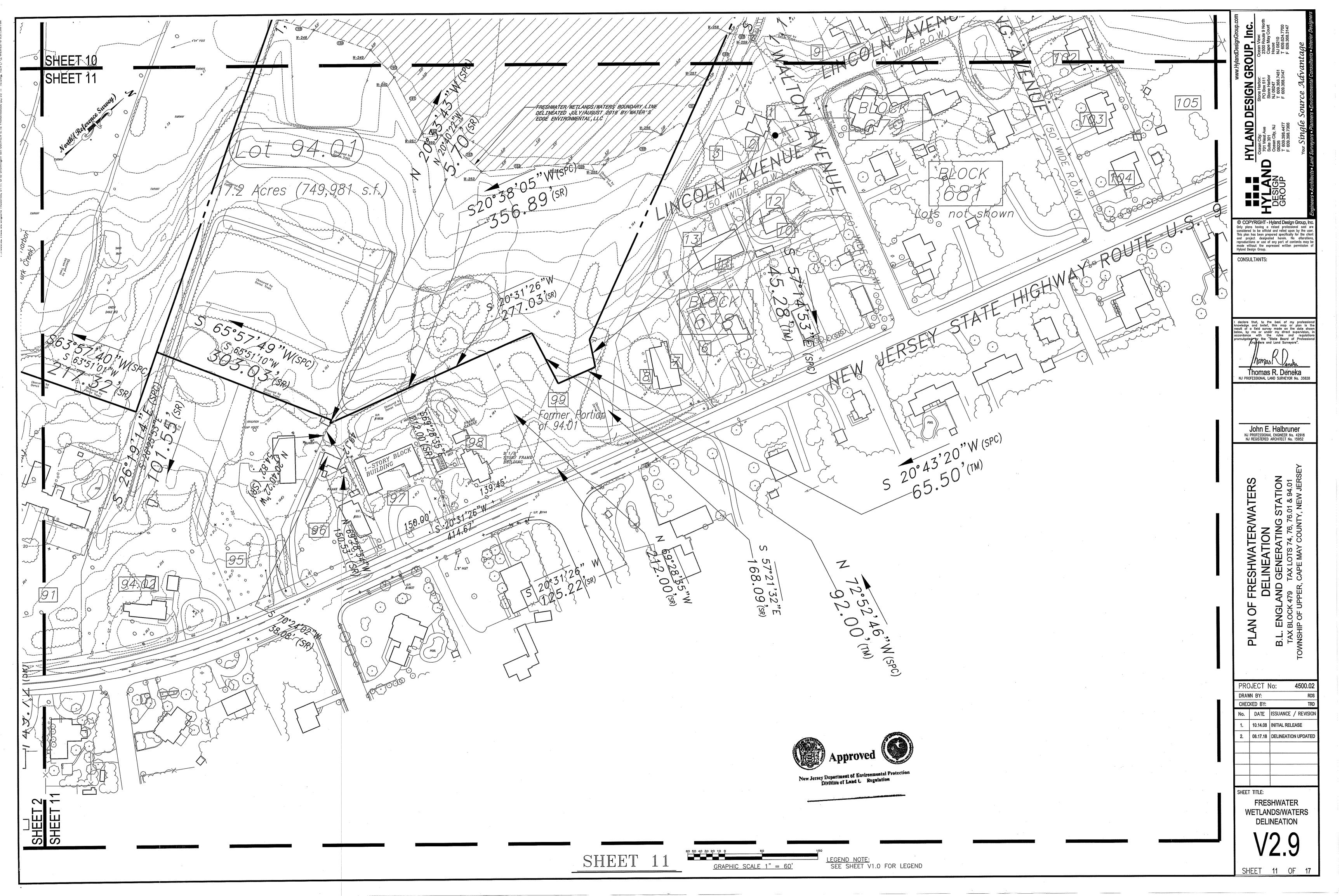
Bob Kozachek, Environmental Specialist 3 Division of Land Use Regulation

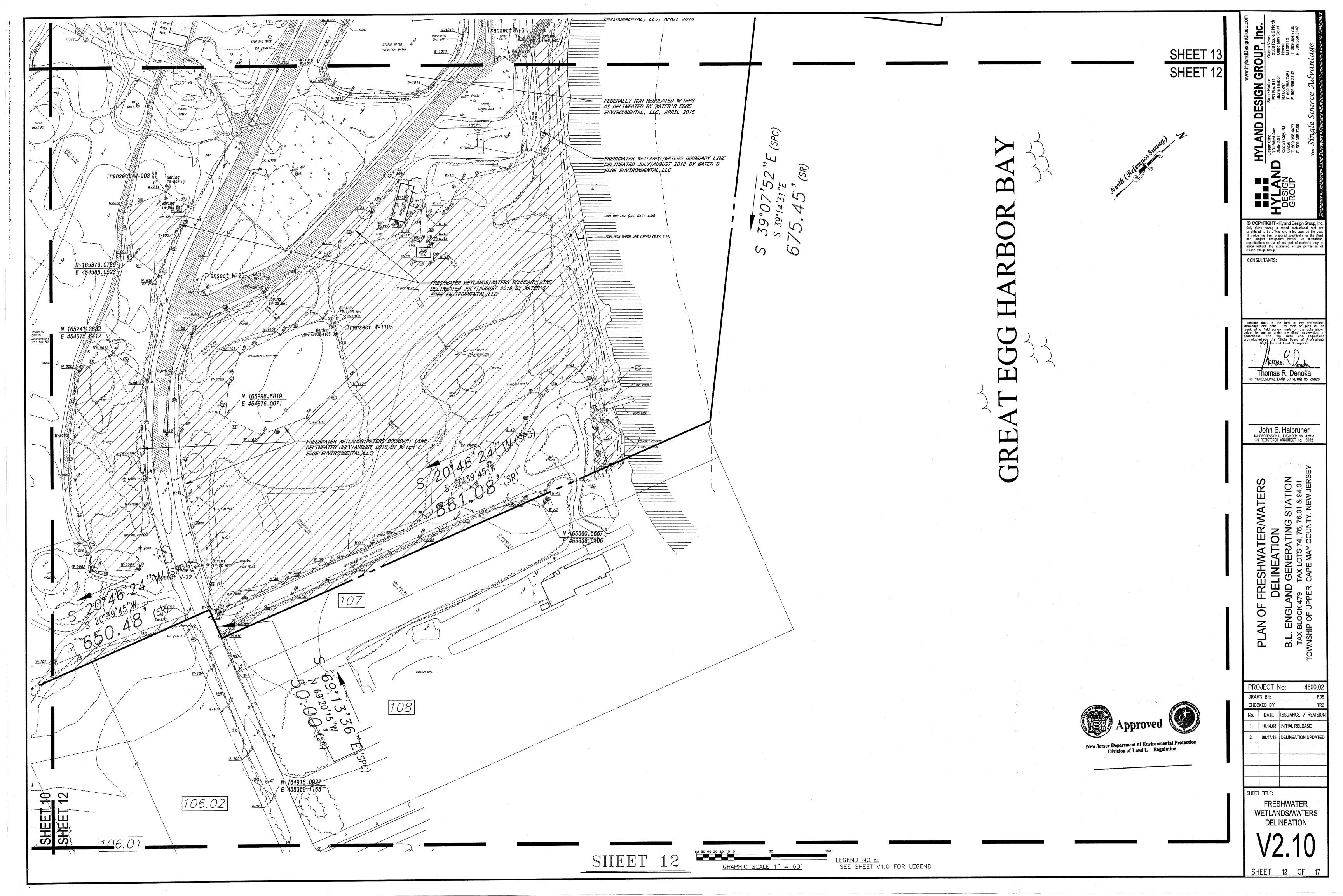
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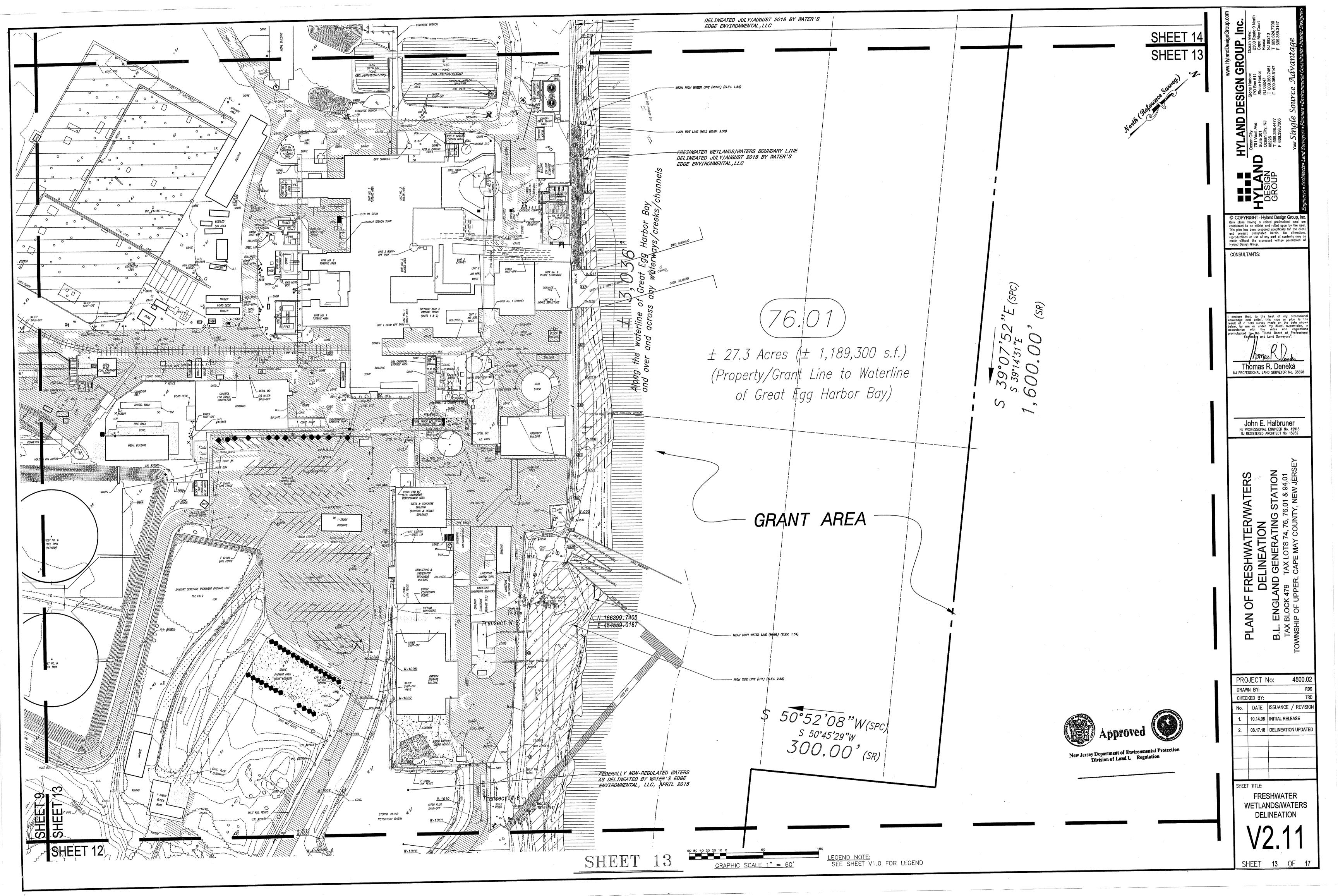
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Attachment D. Wetland Delineation Plans



Attachment E. Wetland Delineation Datasheets

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

	City/County:	Cape May County Sampling Date: 9/16/2019
		State: NJ Sampling Point: WL-A-UP
rhardt	Zachary Lehmann	Section, Township, Range S T Upper R
tc.):	Local Reli	ef (concave, convex, none): None Slope(%) 0
Outer Coastal Plain (L	Lat: 39.25795444	Long: -74.63676497 Datum: Decimal Degrees
·	-	NWI Classification: E2EM1P
	I for this time of year? Yes	X No (If No, explain in Remarks)
		Are "Normal Circumstances" present? Yes X No
		Are Normal Circumstances present: Tes No
, Hydrology	, naturally problematic?	(If needed, explain any answers in Remarks.)
GS - Attach a site	e map showing sampling	point locations, transects, important features, etc.
ent? Yes I	No X	
	Is the Sampled	
	within a wetiant	Yes No X
of one is required; che	Aquatic Fauna (B13) Marl Deposits (B15) (LRR U) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livin Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Yes No	X Depth (inches):	
Yes No	X Depth (inches):	
Yes No	X Depth (inches):	Wetland Hydrology Present? Yes No _X_
auga manitaring wall aar	ial photos provious inspections) if avai	lable:
	buter Coastal Plain (L In Land Itions on the site typica, Hydrology, Hydrology GS - Attach a site ent? Yes Yes Yes Yes Cause of no hydrophyti DTS: of one is required; che aggery (B7) Yes No Yes No Yes No Yes No Yes No	thardt Zachary Lehmann Ic.): Local Reliable Local Plain (L Lat: 39.25795444 In Land Land Lions on the site typical for this time of year? Yes, Hydrology, significantly disturbed?, Hydrology, naturally problematic? GS - Attach a site map showing sampling lent? Yes No Is the Sampled within a Wetland Yes No X Yes No Is the Sampled within a Wetland W



(Plot size: 6 Ft)

(Plot size: 30 Ft)

Tree Stratum

Shrub Stratum

Herb Stratum

Vine Stratum

Poa pratensis

Echinochloa crus-galli

Toxicodendron radicans

US Army Corps of Engineers

<u>Absolute</u>

% Cover

80

10

90

10

10

Dominant

Species

Ν

=Total Cover

Ν

=Total Cover

Status

FACU

FACW

FAC

Yes

No

Χ

Hydrophytic Vegetation Present?

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

SOIL Sampling Point: WL-A-UP

	ption: (Des	cribe to the Matrix	depth ne	eeded to document		icator or eatures	confirm	the absence of Indicators.)	
Depth (inches)	Color	r (moist)	%	Color (moist)	%	Type 1	Loc ²	 Texture	Remarks
0 to 20	10YR	2/1	100					LOAMY SAND	
				luced Martix, CS=Co	vered or	Coated S	and Gra		ng, M=Matrix.
Hydric Soil In				Polyvalue Below S	Surface (S	8) (LRR S,	T, U)	Indicators for Problematic	Hydric Soils: 3
5 cm Mucky Muck Prese 1 cm Muck (Depleted Be Thick Dark S Coast Prairi Sandy Muck Sandy Gleye Sandy Redo Stripped Ma	don (A2) (A3) ulfide (A4) yers (A5) dies (A6) (LRF Mineral (A7) nce (A8) (LRF A9) (LRR P, elow Dark Sur Surface (A12) e Redox (A16 by Mineral (S1 ed Matrix (S4) ox (S5)	(LRR P, T, U) R U) T) face (A11) s) (MLRA 150A) (LRR O, S))	Thin Dark Surface Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfa Depleted Dark Sur Redox Depression Marl (F10) (LRR U Depleted Ochric (F Iron-Manganese N Umbric Surface (F Delta Ochric (F17) Reduced Vertic (F Piedmont Floodpla Anomalous Bright	(S9) (LRi eral (F1) (trix (F2) (G3) cce (F6) rface (F7) as (F8) J) (F11) (MLF (Hasses (F (Hasses (F13) (LRR (MLRA 1 (HB) (MLRA 1 (HB) (MLRA 1 (HB) (MLRA 1	R S, T, U) (LRR O) 12) (LRR O P, T, U) 51) A 150A, 15 F19) (MLRA	, P, T) DB) A 149A)	1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outsic Piedmont Floodplain Soils (F Anomalous Bright Loamy So (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (Other (Explain in Remarks) 3 Indicators of hydrophytic v hydrology must be presen unless disturbed or proble	TF19) (LRR P, S, T) vegetation and wetland at,
Restricti		if observed	d):					Hydric Soil Present?	Yes No _X
Remarks:	_								

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: BL England		City/County:	Cape May County	Sampling Date: 9/16/2019
Applicant/Owner: Orsted			State: NJ	Sampling Point: WL-A-WET
Investigators: James Eberhard	t Zachary L	ehmann	Section, Township, Rang	ge S T Upper R
Landform (hillslope, terrace, etc.):	Toe of Slope	Local Relief (concave, convex, none):	None Slope(%) 0
Subregion (LRRor MLRA): Outer	Coastal Plain (L Lat: 39	.25790602	Long: -74.63681374	Datum: Decimal Degrees
Soil Map Unit Name: Pawcatuk	-Transquaking Complex		NWI Classif	ication: E2EM1Pd
Are climatic / hydrologic conditions		me of year? Yes X	No (If No, e	xplain in Remarks)
Are Vegetation, Soil,	Hydrology , significa	ntly disturbed?	Are "Normal Circumstance	ces" present? Yes X No
Are Vegetation, Soil,				
			(If needed, explain any int locations, transe	ects, important features, etc.
Hydrophytic Vegetation Present?	Yes X No			
Hydric Soil Present?	Yes X No	Is the Sampled Are	a	
Wetland Hydrology Present?	Yes X No	within a Wetland?	Yes _	X No
Remarks:				
HYDROLOGY				
Water Table Present?	✓ Aquati	c Fauna (B13) deposits (B15) (LRR U) gen Sulfide Odor (C1) ged Rhizospheres along Living Fauce of Reduced Iron (C4) t Iron Reduction in Tilled Soils (Muck Surface (C7) (Explain in Remarks) depth (inches): depth (inches):	Surfar Surfar Spars Drain Moss Crayfi Satur Geom Shalla FAC- Sphai	Indicators (minimum of two required) ce Soil Cracks (B6) sely Vegetated Concave Surface (B8) age Patterns (B10) Trim Lines (B16) season Water Table (C2) sish Burrows (C8) ation Visible on Aerial Imag.(C9) norphic Position (D2) ow Aquitard (D3) Neutral Test (D5) gnum moss (D8) (LRR T,U)



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

SOIL Sampling Point: WL-A-WET

Depth	iption: (Des	Matrix	aeptn ne	eaea to aocumen		eatures	contirm	the absence of Indicators.)	
(inches)	Colo	r (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 10		/							Fiberous peat
10 to 20	10YR	4/1	100					SANDY LOAM	Muck
¹Type: C=Con	centration, l	D=Depletion,	RM=Redu	uced Martix, CS=Co	overed or	Coated S	Sand Grai	ins. ² Location: PL=Pore Lir	ning, M=Matrix.
5 cm Muck! Muck Prese 1 cm Muck Depleted B Thick Dark Coast Prair Sandy Muc	edon (A2) c (A3) Sulfide (A4) ayers (A5) dies (A6) (LRi y Mineral (A7) ence (A8) (LR P, elow Dark Sur Surface (A12 ie Redox (A16 ky Mineral (S1 ved Matrix (S4 ox (S5)	(LRR P, T, U) R U) T) fface (A11)) (MLRA 150A		Polyvalue Below S Thin Dark Surface Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfa Depleted Dark Su Redox Depression Marl (F10) (LRR L Depleted Ochric (Iron-Manganese M Umbric Surface (F Delta Ochric (F17 Reduced Vertic (F	e (S9) (LR heral (F1) (heral (F2) F3) hoe (F6) hrace (F7) hrs (F8) J) F11) (MLF Masses (F F13) (LRR) (MLRA 1	R S, T, U) (LRR O) 12) (LRR O P, T, U) 51) A 150A, 15	, P, T) 0B)	Indicators for Problemation 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outsty production of the problemation of the problemation of the problemation of the problematical (F18) (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surfaces Other (Explain in Remarks) Indicators of hydrophytic hydrology must be presunless disturbed or problematical (F18)	side MLRA 150A,B) (F19) (LRR P, S, T) Soils (F20) e (TF12) (LRR T, U) c) c vegetation and wetland
Dark Surface	ce (S7) (LRR	P, S, T, U)		Anomalous Bright			-	A, 153C, 153D)	
Restricti Type: Depth (inch		(if observe	d):					Hydric Soil Present?	Yes X No

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: BL England			City/County:	Cape May County	Sampling Date:	9/16/2019		
Applicant/Owner: Orsted				State: NJ	Sampling Point:	: WL-B-UP		
Investigators: James Eber	rhardt	Zachary Lehm	ann	Section, Township, Rang	n, Township, Range S T Upper R			
Landform (hillslope, terrace, et	c.):		Local Relief (concave, convex, none):	None	Slope(%) 0		
Subregion (LRRor MLRA): O	uter Coastal Plain (L	Lat: 39.258	13828	Long: -74.63665559	Datu	ım: Decimal Degrees		
	n Land			NWI Classit	fication:			
Are climatic / hydrologic condit		I for this time o	of year? Yes X		xplain in Remarks	\ \		
				` '	•	,		
Are Vegetation, Soil _				Are "Normal Circumstance	es present? Y	es X No		
Are Vegetation, Soil _	, Hydrology	_, naturally pro	blematic?	(If needed, explain any	answers in Remar	rks.)		
SUMMARY OF FINDIN	GS - Attach a site	e map show	ving sampling po	int locations, transe	ects, importan	t features, etc.		
Hydrophytic Vocatation Proc	ent? Yes	No X			-			
Hydrophytic Vegetation Pres Hydric Soil Present?			Is the Sampled Area	a				
		No X	within a Wetland?	Yes	No X	(
Wetland Hydrology Present?	Yes	No X						
HYDROLOGY								
Wetland Hydrology Indicate				Casandan	. In alia atawa (mainina	um of two required)		
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Im Water-Stained Leaves (B9) Field Observations:	of one is required; che	Aquatic Fau Marl Depos Hydrogen S Oxidized Ri Presence o Recent Iron Thin Muck	• /	Spars Drain Moss Dry-S Crayf Satur Geon Shalk FAC-	ce Soil Cracks (B6) sely Vegetated Conca age Patterns (B10) Trim Lines (B16) Season Water Table (ish Burrows (C8) ration Visible on Aeria norphic Position (D2) ow Aquitard (D3) Neutral Test (D5) gnum moss (D8) (LR	C2) al Imag.(C9)		
Surface Water Present?	Voc. No.	V Donth	(inches):					
Water Table Present?	Yes No Yes No	 ·	(inches):					
Saturation Present?	Yes No		(inches):	Wetland Hydro	logy Present?	Yes No_X_		
(includes capillary fringe)								
Describe Recorded Data (stream gaster) Remarks: No wetland hydrology present	acge, monitoring wen, der	ta protos, previo	us inspections), il available					



(Plot size: 30 Ft)

(Plot size: 6 Ft)

(Plot size: 30 Ft)

Tree Stratum

Shrub Stratum

Herb Stratum

Vine Stratum

lva frutescens

Poa pratensis

Echinochloa crus-galli

Phragmites australis

Toxicodendron radicans

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

Yes

X

No

Hydrophytic Vegetation Present? SOIL Sampling Point: WL-B-UP

Depth	ription: (Des	Matrix	e aeptn ne	eded to documen		eatures	contirm	the absence of	indicators.)			
(inches)	Colo	or (moist) % Color (moist) % Type ¹ Loc ²				Loc ²	Textu	Re	Remarks			
0 to 2	10YR	2/1	100					SAND		Roots p	resent	
2 to 6	10YR	6/2	100	_				SAND				
¹Type: C=Cor	ncentration,	D=Depletion	, RM=Redu	ced Martix, CS=Co	overed or	Coated	Sand Gra	uins. ² Loca	tion: PL=Pore	Lining, M=Matr	ix.	
Stratified L Organic Bo Organic Bo 5 cm Muck Muck Pres 1 cm Muck Depleted E Thick Dark Coast Prai Sandy Muc	edon (A2) c (A3) Sulfide (A4) ayers (A5) odies (A6) (LR cy Mineral (A7) ence (A8) (LR P, Below Dark Su s Surface (A12 rie Redox (A16 cky Mineral (S- yed Matrix (S4)	(LRR P, T, U) R U) T) rface (A11)) (MLRA 1504	[[Polyvalue Below S Thin Dark Surface Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfa Depleted Dark Surfa Redox Depression Marl (F10) (LRR L Depleted Ochric (Iron-Manganese M Umbric Surface (F Delta Ochric (F17 Reduced Vertic (F	e (S9) (LR eral (F1) (htrix (F2) (F3) (ce (F6) (F8) (F8) (F8) (MLF (F13) (LRR (F13) (MLRA	R S, T, U) (LRR O) 12) (LRR C P, T, U) 51) A 150A, 15	, P, T) 0B)	1 cm M 2 cm M Reduce Piedmc Anoma (MLRA Red Pa Very Si Other (I	luck (A9) (LRR O luck (A10) (LRR o ed Vertic (F18) (o ont Floodplain So lous Bright Loam 153B) arent Material (TF nallow Dark Surfa Explain in Reman	S) putside MLRA 150 putside MLRA 150 putside (F19) (LRR P, put Soils (F20) putside (F20) putside (F12) (LRR P)	T, U)	
	ce (S7) (LRR	P, S, T, U)	[Piedmont Floodplain Soils (F19) (MLRA 149A) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)								
Restrict Type: C Depth (incl	oncrete	(if observe	ed):					Hydric Soil F	Present?	Yes	No _	X
Remarks:												

Project/Site: BL Englan	d			City/County:	Ocean	County	Sampling Date:	9/16/2019
Applicant/Owner: Orste	d					State: NJ	Sampling Point:	WL-B-WET
Investigators: James E	berhardt		Zachary Le	nmann	Section	n, Township, Rang	ge S TUp	per R
Landform (hillslope, terrace	, etc.):		-	Loc	al Relief (concave	, convex, none):	Concave	Slope(%) 0
Subregion (LRRor MLRA):	,	al Plain (I	Lat: 39.2		,	-74.63641882		m: Decimal Degrees
	ppoquinimink-		_				fication: E2EM1P	
Are climatic / hydrologic cor	nditions on the	site typic	al for this tim	e of year? Y	es X No	(If No, e	xplain in Remarks)	
Are Vegetation, Soi				-	Are "No		ces" present? Ye	
Are Vegetation, Soi	I, Hydro	ology	_, naturally	oroblematic?	(If nee	eded, explain any	answers in Remark	<s.)< td=""></s.)<>
SUMMARY OF FIND	INGS - Atta	ach a sit	te map sh	owing samp	oling point loc	ations, transe	ects, important	t features, etc.
Hydrophytic Vegetation Pr	resent? Y	es X	No					
Hydric Soil Present?		es X	No		pled Area			
Wetland Hydrology Prese	n+2	es X	No	within a W	/etiand?	Yes	X No	
Remarks:		-						
The area is a wetland base	· 		, ,	,		,		
HYDROLOGY								
Wetland Hydrology Indic Primary Indicators (minimum		auired: ch	eck all that a	(vlaq			Indicators (minimuce Soil Cracks (B6)	ım of two required)
Surface Water (A1)		-1, -					sely Vegetated Concav	ve Surface (B8)
✓ High Water Table (A2)				Fauna (B13)	11)	_	age Patterns (B10)	To Guillago (EG)
Saturation (A3)				posits (B15) (LRR			Trim Lines (B16)	
Water Marks (B1)			_ , ,	n Sulfide Odor (C	1) ong Living Roots (C3)		eason Water Table (C	C2)
Sediment Deposits (B2)				e of Reduced Iron			ish Burrows (C8)	•
Drift Deposits (B3)				ron Reduction in 1	` '		ation Visible on Aerial	Imag.(C9)
Algal Mat or Crust (B4)				ck Surface (C7)	illed Solis (C6)	Geom	norphic Position (D2)	
Iron Deposits (B5)				Explain in Remarks	:)	Shallo	ow Aquitard (D3)	
Inundation Visible on Aeria	Imagery (B7)			.xpiaiii iii ricinane	?)	FAC-I	Neutral Test (D5)	
Water-Stained Leaves (B9))					Sphag	gnum moss (D8) (LRF	₹ T,U)
Field Observations:								
Surface Water Present?	Yes _	No	_X_ De	oth (inches):				
Water Table Present?	Yes _	X No	De	oth (inches):	4			
Saturation Present?	Yes _	X No	De	oth (inches):	0	Wetland Hydro	logy Present?	Yes _X_ No
(includes capillary fringe) Describe Recorded Data (stream	n gauge, monito	ring well, ae	rial photos, pre	vious inspections), if available:			
Remarks:								
Wetland hydrology present								
g, p								



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

Yes

No

SOIL Sampling Point: WL-B-WET

Depth	ription: (Des	Matrix	aeptn ne	eaea to aocumen		eatures	contirm	i the absence of Indicators	.)
(inches)	Colo	r (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 8	_	/							Fiberous peat
8 to 20	10YR	4/1	100					LOAMY SAND	
¹Type: C=Cor	ncentration,	D=Depletion,	RM=Redu	uced Martix, CS=Co	overed or	Coated S	Sand Gra	ains. ² Location: PL=Po	ore Lining, M=Matrix.
Stratified L Organic Bo 5 cm Muck Muck Pres 1 cm Muck Depleted B Thick Dark Coast Prai Sandy Muc Sandy Gley Sandy Rec	edon (A2) c (A3) Sulfide (A4) ayers (A5) odies (A6) (LR y Mineral (A7) ence (A8) (LR c (A9) (LRR P, Below Dark Su Surface (A12 rie Redox (A16 cky Mineral (S- yed Matrix (S4)	(LRR P, T, U) R U) T) face (A11)) (MLRA 150A) (LRR O, S)		Polyvalue Below S Thin Dark Surface Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surface Depleted Dark Su Redox Depression Marl (F10) (LRR L Depleted Ochric (Iron-Manganese M Umbric Surface (F Delta Ochric (F17 Reduced Vertic (F	e (S9) (LR heral (F1) (heral (F1) (heral (F2)) =3) hice (F6) hirface (F7) his (F8) J) F11) (MLF Masses (F F13) (LRR hirface (LRR hirfa	R S, T, U) LRR O) RA 151) 12) (LRR C) P, T, U) 51)	ı, P, T)	1 cm Muck (A9) (LR 2 cm Muck (A10) (LI Reduced Vertic (F18 Piedmont Floodplair Anomalous Bright Lo (MLRA 153B) Red Parent Material Very Shallow Dark S Other (Explain in Re	RR S) 3) (outside MLRA 150A,B) n Soils (F19) (LRR P, S, T) pamy Soils (F20) (TF2) Surface (TF12) (LRR T, U) pamarks) ophytic vegetation and wetland e present,
Stripped M Dark Surfa	atrix (S6) ce (S7) (LRR	P, S, T, U)		Piedmont Floodpl Anomalous Bright			•	9A, 153C, 153D)	
Restrict Type: Depth (incl Remarks: Hydric soil pre:	nes):	if observe	d):					Hydric Soil Present?	Yes <u>X</u> No

Project/Site: BL England		City/	County: Cape M	lay County	Sampling Date:	9/16/2019
Applicant/Owner: Orsted				State: NJ	Sampling Point:	WL-C-UP
Investigators: Zachary Le	ehmann	James Eberhardt	Section	on, Township, Range	e S TUpp	per R
Landform (hillslope, terrace, e	etc.):		Local Relief (concave	e, convex, none):		Slope(%) 0
Subregion (LRRor MLRA):	Outer Coastal Plain ((I Lat: 39.2532364		-74.61662583	Datur	m: Decimal Degrees
_			<u>, </u>	-	cation: E2EM1Po	
	an Land - Psammen		0 V V N		-	
Are climatic / hydrologic cond					plain in Remarks)	
Are Vegetation, Soil	, Hydrology	, significantly distu	rbed? Are "N	ormal Circumstance	es" present? Ye	s X No
Are Vegetation, Soil	, Hydrology _	, naturally problem	atic? (If ne	eded, explain any a	ınswers in Remark	(s.)
SUMMARY OF FINDIN	NGS - Attach a s	site map showing	sampling point loc	cations, transe	cts, important	features, etc.
Hydrophytic Vegetation Pre	sent? Yes	No X				
Hydric Soil Present?	Yes	No V Is	the Sampled Area			
Wetland Hydrology Present		No X with	thin a Wetland?	Yes	No X	
Remarks:	100					
HVDBOLOGV						
HYDROLOGY						ım of two required)
Wetland Hydrology Indicators Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial In Water-Stained Leaves (B9) Field Observations:	n of one is required; o	Aquatic Fauna (B Marl Deposits (B Hydrogen Sulfide Oxidized Rhizosp Presence of Redi	15) (LRR U) Odor (C1) heres along Living Roots (C3 uced Iron (C4) uction in Tilled Soils (C6) uce (C7)	Surface Sparse Drainae Moss T Dry-Se Crayfis Saturae Geome Shallow	e Soil Cracks (B6) ely Vegetated Concav ge Patterns (B10) Frim Lines (B16) eason Water Table (C sh Burrows (C8) tion Visible on Aerial orphic Position (D2) w Aquitard (D3) leutral Test (D5) num moss (D8) (LRR	ve Surface (B8)
Surface Water Present?	Yes No	X Depth (inche	20/-	1		
Water Table Present?	Yes No			1		
Saturation Present?	Yes No			Wetland Hydrolo	ogy Present?	Yes No_X_
(includes capillary fringe)						
Describe Recorded Data (stream stream) Remarks:	gauge, monitoring weil,	aeriai pilolos, previous ilis	pections), il available.			



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

SOIL Sampling Point: WL-C-UP

Depth	ription: (Des	Matrix	e aepin ne	eded to documen		Features	contirm	the absence of Indicators.)	
(inches)	Color	(moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 1	-	/	100	Black				LOAMY SAND	Organic Layer
1 to 4	10YR	5/2	80	10YR 4/6	20	С	М	LOAMY SAND	
¹Type: C=Cor	ncentration, [D=Depletion,	, RM=Redu	uced Martix, CS=Co	overed o	Coated S	Sand Gra	ains. ² Location: PL=Pore	Lining, M=Matrix.
Hydric Soil I Histosol (A Histic Epip Black Histi Hydrogen S Stratified L Organic Bo 5 cm Muck Muck Pres 1 cm Muck Depleted E Thick Dark Coast Prai Sandy Muc Sandy Rec Stripped M	Indicators: (1) dedon (A2) c (A3) Sulfide (A4) ayers (A5) odies (A6) (LRF cy Mineral (A7) ence (A8) (LRR c (A9) (LRR P, delow Dark Sur c Surface (A12) rie Redox (A16 cky Mineral (S1 yed Matrix (S4) dox (S5)	R P, T, U) (LRR P, T, U) R U) T) face (A11)) (MLRA 150 <i>A</i>) (LRR O, S)		Polyvalue Below : Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Ma Depleted Matrix (I Redox Dark Surface Depleted Dark Surface Redox Depressio Marl (F10) (LRR U Depleted Ochric (I Iron-Manganese I Umbric Surface (I Delta Ochric (F17 Reduced Vertic (F Piedmont Floodpl Anomalous Bright	Surface (See (S9) (LR eral (F1)) atrix (F2) F3) ace (F6) urface (F7) Ins (F8) J) F11) (MLF Hasses (FF13) (LRR F13) (MLRA 15-18) (MLRA 15-18) (MLRA 16-18) (MLRA 1	RA 151) 12) (LRR C P, T, U) 51) A 150A, 15 F19) (MLR	T, U) OB) A 149A)	Indicators for Problema 1 cm Muck (A9) (LRR C) 2 cm Muck (A10) (LRR C) Reduced Vertic (F18) (C) Piedmont Floodplain SC Anomalous Bright Loam (MLRA 153B) Red Parent Material (TF) Very Shallow Dark Surfa Other (Explain in Remains) Indicators of hydroph hydrology must be prounless disturbed or p	otic Hydric Soils: 3 S) S) S) Sutside MLRA 150A,B) Sils (F19) (LRR P, S, T) Sy Soils (F20) F2) ace (TF12) (LRR T, U) rks) Lytic vegetation and wetland esent,
Type: _C Depth (incl Remarks: No hydric soils	hes): 4	if observe	d):					Hydric Soil Present?	Yes No X

Project/Site:	BL England			City/Cou	nty: Ocea	n County	Sampling Date:	9/16/2019
Applicant/Owner:	: Orsted					State: NJ	Sampling Point:	WL-C-WET
Investigators:	James Eberha	ırdt	Za	chary Lehmann	Section	n, Township, Rang	je S T Upj	per R
Landform (hillslo	pe. terrace. etc.)	: To	e of Slope	· · · · · · · · · · · · · · · · · · ·	Local Relief (concave		-	Slope(%) 0
		-	· ·	at: 39.25329629	•	-74.61665836		n: Decimal Degrees
					Eorig.			
Soil Map Unit Na	-	uck-Transqu					cation: E2EM1P	
	_			r this time of year?	Yes X No	(If No, ex	plain in Remarks)	
Are Vegetation	, Soil	_, Hydrolog	y, s	ignificantly disturbed	l? Are "N	ormal Circumstance	es" present? Ye	s X No
Are Vegetation	, Soil	_, Hydrolog	y, r	naturally problematic	? (If ne	eded, explain any a	answers in Remark	(s.)
SUMMARY	OF FINDINGS	S - Attach	a site n	nap showing sa	mpling point loc	cations, transe	cts, important	features, etc.
Hydrophytic Vo	getation Present	t? Yes	X No				-	
Hydric Soil Pres	_	=		Is the	Sampled Area			
		Yes	X No		a Wetland?	Yes	X No	
Wetland Hydro	logy Present?	Yes	X No					
HYDROLOGY								
Field Observation Surface Water P Water Table Pre Saturation Prese (includes capillar	ors (minimum of or (A1) ble (A2) B31) cosits (B2) B3) rust (B4) B5) ble on Aerial Image Leaves (B9) ons: resent? sent? y fringe)	ery (B7) Yes Yes X Yes X	No x	Aquatic Fauna (B13) Marl Deposits (B15) (i Hydrogen Sulfide Odd Oxidized Rhizosphere Presence of Reduced Recent Iron Reduction Thin Muck Surface (C Other (Explain in Rem Depth (inches): Depth (inches):	or (C1) s along Living Roots (C3 Iron (C4) n in Tilled Soils (C6) c7) narks)	Surfac Sparse Draina Moss Dry-Se Crayfis Satura Geom Shallo	ce Soil Cracks (B6) cely Vegetated Concavage Patterns (B10) Trim Lines (B16) ceason Water Table (Cosh Burrows (C8) attion Visible on Aerial orphic Position (D2) w Aquitard (D3) Seutral Test (D5) Inum moss (D8) (LRF	C2) Imag.(C9)
	 	je, monitoring	well, aerial p	photos, previous inspect	ions), if available:			
Remarks: Surface water nearl	by							



EGETATION _ U	se scientific names	s of plants.				Sampling Point:	WL-C-WET	
			Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet:		
Tree Stratum						Number of Dominant Species That Are OBL, FACW, or FAC		(A)
Shrub Stratum Iva frutescens	(Plot size: <u>30 Ft</u>)	10	Y	FACW	Total Number of Dominant Species Across all Strata:	2	(B)
			10	=Total Cover				_ ` ′
Herb Stratum	(Plot size: 6 Ft)				Percent of Dominant Species That Are OBL, FACW, or FAC	100.0%	(A/B)
Spartina patens			100	Y	FACW	Prevalence Index Worksheet		
			100	=Total Cover		Total % Cover of:		
Vine Stratum							$\frac{\text{Multiply by:}}{\text{x 1} = 0}$	
						OBL species	x 2 = 220	
						1 ACW species	x 3 = 0	
						1 AO species	x 4 = 0	
						1 ACO species	-	
						UPL species0	x 5 = 0	
						Column Totals: 110	(A) 220	<u>(</u> B)
						Prevalence Index = B/A=	2.00	
						Hydrophytic Vegetation Indica		
						1 - Rapid Test for Hydroph	-	
						X 2 - Dominance Test > 50%	,	
						X 3 - Prevalence Index ≤ 3.0		
						Problematic Hydrophytic V	egetation (Exp	olain)
						Indicators of hydric soil and wetland be present, unless disturbed or pro		
						Definitions of Vegetation Strat	a:	
						Tree – Woody plants, excluding approximately 20 ft (6 m) or mor (7.6 cm) or larger in diameter at	e in height and	3 in. DBH).
						Sapling – Woody plants, excluding approximately 20 ft (6 m) or morthan 3 in. (7.6 cm) DBH.		
						Shrub – Woody plants, excluding approximately 3 to 20 ft (1 to 6 n		
						Herb – All herbaceous (non-woo herbaceous vines, regardless of plants, except woody vines, less 3 ft (1 m) in height.	size. Includes w	woody
						Woody vine – All woody vines, re	egardless of hei	ight.
						Hydrophytic Vegetation Present? Yes	X No.	

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

SOIL Sampling Point: WL-C-WET

Depth	ption: (Des	Matrix	depth net	eded to document	Redox F		commi	the absence of indicators.)	
(inches)	Color	(moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 20	10YR	5/1	100		- · · · · · · · · · · · · · · · · · · ·			LOAMY SAND	
¹Type: C=Cond	centration, D	=Depletion,	RM=Redu	ced Martix, CS=Co	overed or	Coated S	Sand Grai	ns. ² Location: PL=Pore Lining	, M=Matrix.
5 cm Mucky Muck Prese 1 cm Muck Depleted Be Thick Dark Coast Prairi Sandy Muck Sandy Gleye Sandy Redo Stripped Ma Dark Surface	don (A2) (A3) ulfide (A4) yers (A5) dies (A6) (LRR Mineral (A7) (nce (A8) (LRR P, Telow Dark Surface (A12) e Redox (A16) yer Mineral (S1) ed Matrix (S4) ox (S5) utrix (S6) e (S7) (LRR P	LRR P, T, U) U) ace (A11) (MLRA 150A) (LRR O, S)	[] [] [] []	Polyvalue Below S Thin Dark Surface Loamy Mucky Min Loamy Gleyed Ma Pepleted Matrix (F Redox Dark Surfa Depleted Dark Su Redox Depression Marl (F10) (LRR L Depleted Ochric (I Iron-Manganese M Umbric Surface (F Delta Ochric (F17 Reduced Vertic (F Piedmont Floodpla Anomalous Bright	e (S9) (LRF leral (F1) (I latrix (F2) F3) loce (F6) rface (F7) los (F8) J) F11) (MLR Masses (F1 F13) (LRR) (MLRA 1: F18) (MLRA 1: F18) (MLRA 1:	A 151) 12) (LRR C) P, T, U) A 150A, 15 =19) (MLRA	o, P, T) OB) A 149A)	Indicators for Problematic H	MLRA 150A,B) 9) (LRR P, S, T) 6 (F20) F12) (LRR T, U) getation and wetland
Type: Depth (inch	es):							Hydric Soil Present?	'es X No
Remarks:									

Project/Site: Orsted Wind, Ocean City Bridge City/9	County: Cape May County Sampling Date: 03/21/2022
Applicant/Owner: Ocean Wind, LLC	State: NJ Sampling Point: SE-1-WLC
Investigator(s): Steve Seymour James Eberhardt Section	
Landform (hillslope, terrace, etc.): level Loca	al relief (concave, convex, none): none Slope (%): 0
	115 Long: -74.627445 Datum: WGS84
Soil Map Unit Name: Appoquiniumink- Transquaking- Mrspilli	
Are climatic / hydrologic conditions on the site typical for this time of year? ${}^{\backprime}$	YesX No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly distu	urbed? Are "Normal Circumstances" present? YesX No
Are Vegetation, Soil, or Hydrology naturally problem	
SUMMARY OF FINDINGS – Attach site map showing sar	mpling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X No	
Hydric Soil Present? Yes X No	Is the Sampled Area
Wetland Hydrology Present? Yes X No	within a Wetland? Yes _ X _ No
Remarks:	
Portion of upland bulkhead. "Cable crossing area"	signage in vicinity
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Marl Deposits (B15) (LR	RR U) Drainage Patterns (B10)
$\overline{\underline{X}}$ Saturation (A3) $\overline{\underline{X}}$ Hydrogen Sulfide Odor ((C1) Moss Trim Lines (B16)
X Water Marks (B1) Oxidized Rhizospheres	along Living Roots (C3) Dry-Season Water Table (C2)
Sediment Deposits (B2) Presence of Reduced Iron	ron (C4) Crayfish Burrows (C8)
X Drift Deposits (B3) Recent Iron Reduction in	in Tilled Soils (C6) Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Thin Muck Surface (C7)	Geomorphic Position (D2)
Iron Deposits (B5) Other (Explain in Remar	rks) Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	FAC-Neutral Test (D5)
Water-Stained Leaves (B9)	Sphagnum moss (D8) (LRR T, U)
Field Observations:	
Surface Water Present? Yes No _X_ Depth (inches):	
Water Table Present? Yes X No Depth (inches): 1	
Saturation Present? Yes X No Depth (inches): S	Wetland Hydrology Present? Yes X No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, pro	revious inspections), if available:
Remarks:	
Remarks.	

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

- 20 ft		Dominant		Dominance Test worksheet:		
<u>Tree Stratum</u> (Plot size: <u>30 ft</u>) 1.	<u>% Cover</u>	Species?	<u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC:	2	. (A)
2				Total Number of Dominant		
3				Species Across All Strata:	2	(B)
4				· · · · · · · ·	400	
5				Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)
6						. (/
7				Prevalence Index worksheet:		
8					Multiply by:	
	0 :	= Total Cov	er	OBL species90 x 1 =		_
50% of total cover:				FACW species x 2 =		
Sapling/Shrub Stratum (Plot size: 15 ft)				FAC species x 3 =	<u>-</u>	_
1				FACU species x 4 =	<u>-</u>	_
2.				UPL species x 5 =		_
3				Column Totals: 90 (A)	90	(B)
4.				B	1.0	
5				Prevalence Index = B/A =		
6.				Hydrophytic Vegetation Indicator		
7				1 - Rapid Test for Hydrophytic	vegetation	
8.				2 - Dominance Test is >50%		
0	0	- Total Cov		3 - Prevalence Index is ≤3.0 ¹	1	
50% of total cover:				Problematic Hydrophytic Veget	ation (Expla	in)
Herb Stratum (Plot size: 5 ft)	20 % 01	total cover.				
1. Spartina alterniflora	20	Υ	OBL	Indicators of hydric soil and wetlan be present, unless disturbed or prol		must
Sparting difference Sparting patens	70	Y	OBL	Definitions of Four Vegetation St		
-			ODL	Deminions of Four Vegetation St	rata.	
3				Tree - Woody plants, excluding vin		
4				more in diameter at breast height (I height.	JBH), regard	less of
5				g.n.		
6				Sapling/Shrub – Woody plants, ex than 3 in. DBH and greater than 3.2		
7				than 3 iii. DBH and greater than 3.2	10 II (I III) IAI	1.
8				Herb - All herbaceous (non-woody		ardless
9				of size, and woody plants less than	3.28 π tall.	
10				Woody vine - All woody vines grea	ater than 3.2	8 ft in
11				height.		
12						
		= Total Cov				
50% of total cover:	20% of	total cover:				
Woody Vine Stratum (Plot size: 30 ft)						
1						
2						
3						
4						
5				Hydrophytic		
	0	= Total Cov	er	Vegetation X	NI -	
50% of total cover:	20% of	total cover:		Present? Yes	No	
Remarks: (If observed, list morphological adaptations be	low).			1		
						I

Sampling Point: SE-1-WL

Sampling Point: SE-1-WL

Profile Desc								3		
	ription: (Describe	to the depth	needed to docur	nent the ii	ndicator	or confirr	n the absence	of indicate	ors.)	
Depth	Matrix		Redo	x Features	6					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Remarks	
0"-12"	4/1 10YR	100					fine sand	organ	ic loam and	l clav
12"-20"	3/1 10YR	100					fine sand		and clay, tr	•
12 -20	3/1 10110								and clay, in	ace sailu
		· — — –								
		· — — –								
¹ Type: C=Ce	oncentration, D=Dep	letion. RM=F	Reduced Matrix, M	S=Masked	Sand Gra	ins.	² Location:	PL=Pore L	ining, M=Matri	Κ.
	ndicators: (Applic								matic Hydric s	
Histosol			Polyvalue Be		-	рреті			•	
	, ,						· —			
	pipedon (A2)		Thin Dark Su					luck (A10)		U DA 450A D)
Black Hi			Loamy Muck			0)			18) (outside N	
	n Sulfide (A4)		Loamy Gleye	,	F2)				ain Soils (F19)	
	l Layers (A5)		X Depleted Ma	, ,					: Loamy Soils (I	-20)
	Bodies (A6) (LRR P		Redox Dark	,	,			(A 153B)		
5 cm Mu	cky Mineral (A7) (LF	RR P, T, U)	Depleted Da	rk Surface	(F7)		Red Pa	rent Mater	ial (TF2)	
Muck Pr	esence (A8) (LRR U)	Redox Depre	essions (F8	3)		Very S	hallow Darl	k Surface (TF1	2)
1 cm Mu	ck (A9) (LRR P, T)		Marl (F10) (L	.RR U)			Other (Explain in I	Remarks)	
	Below Dark Surfac	e (A11)	Depleted Oc	hric (F11) (MLRA 15	1)		•		
	irk Surface (A12)	,	iron-Mangan				.T) ³ Indic	ators of hyd	drophytic veget	ation and
_	airie Redox (A16) (N	/LRA 150A)	_		. , .		•	-	ogy must be pr	
	lucky Mineral (S1) (L		Delta Ochric			-,		-	ed or problema	
	leyed Matrix (S4)	0, 0,	Reduced Ver			1Δ 150R		oo alotal be	od or problema	
	edox (S5)		Piedmont Flo					452D)		
	Matrix (S6)	. =	Anomaious E	srignt Loan	ny Solis (F	·20) (IVI L F	RA 149A, 153C,	1530)		
	rface (S7) (LRR P, S									
Restrictive	_ayer (if observed):		ممام							
Туре:		none	<u>observed</u>							
Depth (in	ches):						Hydric Soil	Present?	Yes X	No
Remarks:										
Kemarks.										
Soils	: 0-12" are orga	nic loam :	and clay with a	plant roc	ots: 12"-	20" are	e loam and o	:lav		
	s 0-12" are orga		and clay with լ	olant roc	ots; 12"-	20" are	e loam and c	slay		
	s 0-12" are orga trace sand, sati		and clay with լ	olant roc	ots; 12"-	20" are	e loam and c	slay		
			and clay with լ	olant roc	ots; 12"-	20" are	e loam and d	slay		
			and clay with լ	olant roc	ots; 12"-	20" are	e loam and d	slay		
			and clay with լ	olant roc	ots; 12"-	20" are	e loam and c	slay		
			and clay with լ	olant roc	ots; 12"-	20" are	e loam and c	clay		
			and clay with լ	olant roc	ots; 12"-	20" are	e loam and c	elay		
			and clay with լ	olant roc	ots; 12"-	20" are	e loam and c	elay		
			and clay with լ	olant roc	ots; 12"-	20" are	e loam and d	day		
			and clay with լ	olant roc	ots; 12"-	20" are	e loam and d	clay		

Project/Site: Orsted Wind-Ocean City Bridge City/C	County: Cape May County Sampling Date: 03/21/2022
Applicant/Owner: Ocean Wind, LLC	State: NJ Sampling Point: SE-UPLC
Investigator(s): Steve Seymour, James Eherhardt Section	
Landform (hillslope, terrace, etc.): hillslope Local	
Subregion (LRR or MLRA): <u>\$149A</u> Lat: <u>39.25250</u>	
Soil Map Unit Name: Orhan Land psamments	NWI classification:none
Are climatic / hydrologic conditions on the site typical for this time of year? $^{\prime}$	′es X No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly distur	bed? Are "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, or Hydrology naturally problems	atic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing same	npling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes NoX	
Hydric Soil Present? Yes NoX	Is the Sampled Area within a Wetland? Yes NoX
Wetland Hydrology Present? Yes NoX	within a Wetland? Yes No
Remarks:	
LIVEROLOGY	
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Marl Deposits (B15) (LRI	
Saturation (A3) Hydrogen Sulfide Odor (0 Water Marks (B1) Oxidized Rhizospheres a	
Water Marks (B1) Oxidized Rhizospheres a Sediment Deposits (B2) Presence of Reduced Iro	
Sediment Deposits (B2) Presence of Reduced ind Drift Deposits (B3) Recent Iron Reduction in	
Algal Mat or Crust (B4) Thin Muck Surface (C7)	Geomorphic Position (D2)
Iron Deposits (B5) Other (Explain in Remark	
Inundation Visible on Aerial Imagery (B7)	FAC-Neutral Test (D5)
Water-Stained Leaves (B9)	Sphagnum moss (D8) (LRR T, U)
Field Observations:	
Surface Water Present? Yes No _X Depth (inches):	
Water Table Present? Yes No _X _ Depth (inches):	
Saturation Present? Yes No _X Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes No _X
Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre	vious inspections), if available:
Remarks:	
Tremarks.	

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

	Absolute	e Dominar	nt Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30 ft)			? Status	Number of Dominant Species
Prunus serotina	<u> 10 </u>	<u>Y</u>	<u>FACU</u>	That Are OBL, FACW, or FAC:1 (A)
2				Total Niverban of Dancis and
3.				Total Number of Dominant Species Across All Strata: (B)
				Species / tel ess / til ettata.
4				Percent of Dominant Species 25
5				That Are OBL, FACW, or FAC: (A/B)
6				Prevalence Index worksheet:
7	_	_		
8				Total % Cover of: Multiply by:
	10	_ = Total C	over	OBL species x 1 =
EOO/ of total account		_		FACW species x 2 =
50% of total cover:	20% (oi totai covi		FAC species <u>60</u> x 3 = <u>180</u>
Sapling/Shrub Stratum (Plot size: 15 ft)	00	V	E40	FACU species 60 x 4 = 240
1. Toxicodendron radicans	60	<u> </u>	<u>FAC</u>	
2				UPL species x 5 =
3				Column Totals:(A)(B)
				3.5
4				Prevalence Index = B/A = 3.5
5				Hydrophytic Vegetation Indicators:
6				1 - Rapid Test for Hydrophytic Vegetation
7	_			2 - Dominance Test is >50%
8				3 - Prevalence Index is ≤3.0 ¹
	60	_ = Total C	over	
500/ -ft-t-1		-		Problematic Hydrophytic Vegetation ¹ (Explain)
50% of total cover:	20% (of total cove	er:	
Herb Stratum (Plot size: 5 ft)			=	¹ Indicators of hydric soil and wetland hydrology must
1. Artemisia annua	30	<u>Y</u>	<u>FACU</u>	be present, unless disturbed or problematic.
2				Definitions of Four Vegetation Strata:
3.				
				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
4				more in diameter at breast height (DBH), regardless of height.
5				l l l l l l l l l l l l l l l l l l l
6				Sapling/Shrub – Woody plants, excluding vines, less
7		_		than 3 in. DBH and greater than 3.28 ft (1 m) tall.
8				Herb – All herbaceous (non-woody) plants, regardless
9.				of size, and woody plants less than 3.28 ft tall.
				O. 0.20, 2.1.2 to 0.20, p.1.1.1.0 1.000 to 1.1.1.1.1
10	_			Woody vine - All woody vines greater than 3.28 ft in
11	_	_		height.
12	_			
	_30	_ = Total C	over	
50% of total cover:	20% (of total cove	er:	
Woody Vine Stratum (Plot size: 30 ft)				
Parthenocissus quinquefolia	20	V	EACH	
• •				
2	_			
3				
4				
5.				Hydrophytia
	20	_ = Total C		Hydrophytic Vegetation
5004 54 4 1	'	_		Present? Yes No _X_
50% of total cover:		of total cove	er:	
Remarks: (If observed, list morphological adaptations bel	ow).			
Poison Ivy growing in shrub form	10.124	ft high		
1 Olson Ivy growing in shrub form	1 10-13 1	it riigii.		

Sampling Point: SE-UPL

Sampling Point: SE-UPL

Project/Site: Orsted Wind-Ocean City Bridge Cit	v/County: Cape May	County	Sampling Date: 03/21/2022		
Applicant/Owner: Ocean Wind, LLC	,, county	State: NJ	Sampling Date: 03/21/2022 Sampling Point: SW-WLA		
Investigator(s): Steve Seymour, James Eberhardt Se	ection Township Range	Township of U	pper		
Landform (hillslope, terrace, etc.): level Lo					
, , ,			8		
Soil Map Unit Name: Appoquiniumink- Transquaking- Mrspill					
•			ation: E2EM1Pd		
Are climatic / hydrologic conditions on the site typical for this time of year?					
Are Vegetation, Soil, or Hydrology significantly dis			resent? Yes X No		
Are Vegetation, Soil, or Hydrology naturally proble	ematic? (If needed, e	explain any answers	s in Remarks.)		
SUMMARY OF FINDINGS - Attach site map showing s	ampling point locatio	ons, transects,	important features, etc.		
Hudesphatic Variation Present?					
Hydrophytic Vegetation Present? Yes X No Hydric Soil Present? Yes X No	Is the Sampled Area	V			
Wetland Hydrology Present? Yes X No	within a Wetland?	Yes^_	No		
Remarks:					
Califfornia de la marca della marca della					
fiddler crabs present					
HYDROLOGY					
Wetland Hydrology Indicators:		Secondary Indicate	ors (minimum of two required)		
Primary Indicators (minimum of one is required; check all that apply)		Surface Soil C	Cracks (B6)		
X Surface Water (A1) X Aquatic Fauna (B13)		Sparsely Vegetated Concave Surface (B8)			
X High Water Table (A2) Marl Deposits (B15) (I		Drainage Patterns (B10)			
\underline{X} Saturation (A3) \underline{X} Hydrogen Sulfide Odd		Moss Trim Lin			
	es along Living Roots (C3)		Vater Table (C2)		
Sediment Deposits (B2) Presence of Reduced		Crayfish Burro	` '		
X Drift Deposits (B3) Recent Iron Reduction		Saturation Visible on Aerial Imagery (C9)			
Algal Mat or Crust (B4) Thin Muck Surface (C	*	Geomorphic Position (D2)			
Iron Deposits (B5) Other (Explain in Rem Inundation Visible on Aerial Imagery (B7)	arks)	Shallow Aquitard (D3) FAC-Neutral Test (D5)			
X Water-Stained Leaves (B9)		_	oss (D8) (LRR T, U)		
Field Observations:		Opnagnum me)33 (D0) (ERR 1, 0)		
Surface Water Present? Yes X No Depth (inches):	to surface				
Water Table Present? Yes X No Depth (inches): _					
Saturation Present? Yes X No Depth (inches):		lydrology Present	? Yes X No		
(includes capillary fringe)					
Describe Recorded Data (stream gauge, monitoring well, aerial photos,	previous inspections), if avai	ilable:			
Remarks;					
Remarks.					

Tree Stratum (Plot size: 30 ft	Absolute	Dominan	t Indicator	Dominance Test worksheet:
Tree Stratum (Flot size)	<u>% Cover</u>	r <u>Species</u>	? Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: (A)
2	_			Total Number of Dominant
3				Species Across All Strata: (B)
4				
5				Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
6.				That Ald OBE, FAOW, OF FAO.
7				Prevalence Index worksheet:
				Total % Cover of: Multiply by:
8		_ = Total Co		OBL species <u>60</u> x 1 = <u>60</u>
500/-5/-/-		-		FACW species 30 x 2 = 60
50% of total cover:	20% c	ot total cove	:r:	FAC species x 3 =
Oaphing/Onliab Orlatanii (1 lot 9i20:)				FACU species x 4 =
1				UPL species x 5 =
2				Column Totals: 90 (A) 120 (B)
3	_			Column rotals. 30 (A) 120 (B)
4				Prevalence Index = B/A =1.33
5				Hydrophytic Vegetation Indicators:
6.				1 - Rapid Test for Hydrophytic Vegetation
7.				
8				2 - Dominance Test is >50%
o		_ = Total Co		3 - Prevalence Index is ≤3.0¹
500/ 51 1 1				Problematic Hydrophytic Vegetation ¹ (Explain)
50% of total cover:	20% c	ot total cove	er:	
Herb Stratum (Plot size: 5 ft)	0.0		E4014/	¹ Indicators of hydric soil and wetland hydrology must
Phragmites australis	30	<u>Y</u>		be present, unless disturbed or problematic.
2. Spartina alterniflora				Definitions of Four Vegetation Strata:
3. Spartina patens	10	<u>N</u>	<u>OBL</u>	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
4	_			more in diameter at breast height (DBH), regardless of
5				height.
6.				Sapling/Shrub – Woody plants, excluding vines, less
7.				than 3 in. DBH and greater than 3.28 ft (1 m) tall.
8.				
				Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
9				or size, and woody plants less than 5.20 it tall.
10	_			Woody vine - All woody vines greater than 3.28 ft in
11				height.
12				
	90	_ = Total Co	over	
50% of total cover:	20% c	of total cove	r:	
Woody Vine Stratum (Plot size: 30 ft)				
1				
2				
3.				
4				
5.	_			
J	0	- T-t-L O		Hydrophytic Vegetation
		_ = Total Co		Present? Yes X No
50% of total cover:		of total cove	:r:	
Remarks: (If observed, list morphological adaptations bel	ow).			

Sampling Point: SW-WL

Profile Desc	ription: (Describ	e to the depth	needed to docum	nent the indicat	or or confirm	the absence	of indicators.)
Depth	Matrix		Redo	k Features			
(inches)	Color (moist)	%	Color (moist)	%Туре	Loc ²	<u>Texture</u>	Remarks
0"-6"	2/1 10YR	100					organic, muck/peat
6"-20"	6/1 10YR	100					pure sand, grains coated
						-	grame occurrence
17			Sandara and Belanders Beld			21+:	DI - Dana Lining Manharin
			Reduced Matrix, MS RRs, unless other		Grains.		PL=Pore Lining, M=Matrix. for Problematic Hydric Soils ³ :
		ilicable to all L					
Histosol	• •			low Surface (S8)			Muck (A9) (LRR O)
. —	oipedon (A2) stic (A3)			rface (S9) (LRR			Muck (A10) (LRR S)
1 37	en Sulfide (A4)		Loamy Gleye	/ Mineral (F1) (L d Matrix (F2)	KK O)		ed Vertic (F18) (outside MLRA 150A,B) ont Floodplain Soils (F19) (LRR P, S, T)
ı —	d Layers (A5)		Depleted Mai				alous Bright Loamy Soils (F20)
_	Bodies (A6) (LRR	P T II)	Redox Dark				RA 153B)
	icky Mineral (A7) (k Surface (F7)		,	arent Material (TF2)
	esence (A8) (LRR		Redox Depre				Shallow Dark Surface (TF12)
	ick (A9) (LRR P, T	•	Marl (F10) (L	` '			(Explain in Remarks)
	d Below Dark Surf	•	` ` ` `	nric (F11) (MLR	(151)	_	(
	ark Surface (A12)	,		ese Masses (F12	•	T) ³ Indio	cators of hydrophytic vegetation and
	rairie Redox (A16)	(MLRA 150A)					tland hydrology must be present,
Sandy N	lucky Mineral (S1)	(LRR O, S)		(F17) (MLRA 1 5		unl	ess disturbed or problematic.
X Sandy G	Gleyed Matrix (S4)		Reduced Ver	tic (F18) (MLRA	150A, 150B)		
Sandy F	ledox (S5)		Piedmont Flo	odplain Soils (F	9) (MLRA 14 9	9A)	
Stripped	Matrix (S6)		Anomalous E	right Loamy Soil	s (F20) (MLR/	A 149A, 153C	, 153D)
	rface (S7) (LRR P						
Restrictive	Layer (if observe	d):					
Туре:			_				
Depth (in	ches):					Hydric Soil	Present? Yes X No
Remarks:						1	
sub	soil is rounded	d. coarse d	uartz sand gra	ins. coated w	vith organic	c laver	
		a, ccacc q	<u> </u>	,		,	

Project/Site: Orsted Wind- Ocean City Bridge	_ City/County: _ Cape N	May County	Sampling Date: 03/21/2022			
Applicant/Owner: Orsted Wind, LLC			Sampling Point: SW-UPLA			
Investigator(s): Steve Seymour, James Eberhardt						
Landform (hillslope, terrace, etc.): hillslope						
Subregion (LRR or MLRA): S149A Lat: 3						
	Y					
Are climatic / hydrologic conditions on the site typical for this time of						
Are Vegetation, Soil, or Hydrology significan		rmal Circumstances" p	resent? Yes X No			
Are Vegetation, Soil, or Hydrology naturally	oroblematic? (If need	ed, explain any answer	rs in Remarks.)			
SUMMARY OF FINDINGS - Attach site map showing	ng sampling point loc	ations, transects,	, important features, etc.			
Hydrophytic Vegetation Present? Yes No _X						
Hydric Soil Present? Yes No X	is the Sampled Ai		V			
Wetland Hydrology Present? Yes No X	within a Wetland?	? Yes	No_X			
Remarks:						
miles of all sequents fill in the area						
piles of old concrete fill in the area						
HYDROLOGY						
Wetland Hydrology Indicators:		Secondary Indicat	tors (minimum of two required)			
Primary Indicators (minimum of one is required; check all that apply			Surface Soil Cracks (B6)			
Surface Water (A1) Aquatic Fauna (B			Sparsely Vegetated Concave Surface (B8)			
High Water Table (A2) Marl Deposits (B15) (LRR U) Drainage Patterns (B10)						
Saturation (A3) Hydrogen Sulfide		Moss Trim Li	, ,			
Water Marks (B1) Oxidized Rhizos Sediment Deposits (B2) Presence of Red	pheres along Living Roots (C	Ory-Season v Crayfish Burn	Water Table (C2)			
			` '			
Drift Deposits (B3) Recent Iron Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Thin Muck Surface (C7) Geomorphic Position (D2)						
Iron Deposits (B5) Other (Explain in	, ,	Shallow Aquit	` '			
Inundation Visible on Aerial Imagery (B7)		FAC-Neutral				
Water-Stained Leaves (B9)		Sphagnum m	oss (D8) (LRR T, U)			
Field Observations:						
Surface Water Present? Yes No _X Depth (inches	, 					
Water Table Present? Yes No X Depth (inches			.,			
Saturation Present? Yes No _X Depth (inche	es): Wetla	nd Hydrology Presen	t? Yes No <u>X</u>			
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial phonone phonone phonone provided in the control of	l otos, previous inspections), if	f available:				
Remarks:						
	1 10 46					
Area may have been historically filled. Ar	ea elevated 3-4ft near	rby tidal marsh.				

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

20#	Absolute	Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30ft)		Species? Status	- Number of Dominant Species
1. Juniperus virginiana	<u>70</u>	Y FACU	_ That Are OBL, FACW, or FAC: (A)
2			
3.			Total Number of Dominant Species Across All Strata: 2 (B)
			(B)
4			Percent of Dominant Species
5			That Are OBL, FACW, or FAC: (A/B)
6			-
7			Prevalence Index worksheet:
8			Total % Cover of:Multiply by:
		= Total Cover	OBL species x 1 =
500/ 5/ /			FACW species x 2 =
50% of total cover:	20% 01	total cover:	FAC species x 3 =
Sapling/Shrub Stratum (Plot size: 15ft)			FACU species 85 x 4 = 340
1			
2			UPL species x 5 =
3.			Column Totals: <u>85</u> (A) <u>340</u> (B)
			- 40
4			Prevalence Index = B/A = 4.0
5			Hydrophytic Vegetation Indicators:
6			_
7			2 - Dominance Test is >50%
8.			3 - Prevalence Index is ≤3.0¹
	$^{\circ}$	= Total Cover	
500/ 51 / 1			Problematic Hydrophytic Vegetation ¹ (Explain)
50% of total cover:	20% of	total cover:	-
Herb Stratum (Plot size: 5ft)			¹ Indicators of hydric soil and wetland hydrology must
1			_ be present, unless disturbed or problematic.
2			Definitions of Four Vegetation Strata:
3.			
			Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
4			more in diameter at breast height (DBH), regardless of height.
5			- Height.
6			_ Sapling/Shrub – Woody plants, excluding vines, less
7			than 3 in. DBH and greater than 3.28 ft (1 m) tall.
8			Horb All harbanania (non illanda) planta regardinas
			 Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
9			_ or size, and troody plants loss than older it tall.
10			- Woody vine - All woody vines greater than 3.28 ft in
11			_ height.
12			_
	0	= Total Cover	
50% of total cover:	20% of	total cover	
Woody Vine Stratum (Plot size: 30ft)			-
	15	V	
Lonicera japonica		Y FACU	-
2			_
3			_
4			
5.			-
J	15		 Hydrophytic Vegetation
		= Total Cover	Present? Yes No _X
50% of total cover:	20% of	total cover:	_ 11036/R: 103 <u> </u>
Remarks: (If observed, list morphological adaptations belo	Ό ₩).		

Sampling Point: SW-UPL

SW-UPL

SOIL

Profile Desc	ription: (Describe	to the depth	needed to docum	nent the i	ndicator	or confirm	the absence	of indicato	rs.)	
Depth	Matrix		Redo	x Features	3					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Remarks	
0"-20"	3/3 10YR	100						silty loa	m with 5%	gravel, dry
	-									
1Typo: C=C	oncentration, D=De	olotion DM-C	Poduood Motriy MS		Sond Cr	·	2L continu	DI =Doro Li	ning, M=Matr	iv.
	Indicators: (Applic					aii15.			matic Hydric	
Histosol	`	Jabio to all E	Polyvalue Be		,	DD C T III		luck (A9) (L	-	00113 .
	oipedon (A2)		Thin Dark Su		. , .			luck (A3) (L	•	
	stic (A3)		Loamy Mucky	, ,				, , ,		MLRA 150A,B)
	n Sulfide (A4)		Loamy Gleye	•		-,				(LRR P, S, T)
Stratified	d Layers (A5)		Depleted Mat		,				Loamy Soils	
Organic	Bodies (A6) (LRR I	P, T, U)	Redox Dark S	Surface (F	6)		(MLF	RA 153B)		
5 cm Mu	ıcky Mineral (A7) (L	RR P, T, U)	Depleted Dar	k Surface	(F7)		_	arent Materi	` '	
	esence (A8) (LRR I	•	Redox Depre	*	3)				Surface (TF	12)
	ıck (A9) (LRR P, T)		Marl (F10) (L	•	(841 B 8 41	-4.	Other (Explain in F	Remarks)	
	d Below Dark Surfac ark Surface (A12)	ce (A11)	Depleted Oct		•	•	r\ 3ladia	otoro of by	lrophytic vege	tation and
	rairie Redox (A16) (MI RA 150A)					-	_	nopriyiic vege ogy must be p	
	fucky Mineral (S1) (Delta Ochric	. , ,		, 0,		-	d or problema	*
	Gleyed Matrix (S4)		Reduced Ver		-	0A. 150B)	u iii.	,00 0,0,0,0	a or problems	
	Redox (S5)		Piedmont Flo				9A)			
Stripped	Matrix (S6)						A 149A, 153C,	153D)		
Dark Su	rface (S7) (LRR P,	S, T, U)								
Restrictive	Layer (if observed)	: none ol	bserved							
Туре:		110110 01	_							
Depth (in	ches):						Hydric Soil	Present?	Yes	No <u>X</u>
Remarks:										
	Live trees all re	ed cedar: 3	3-12" DBH sc	me dea	nd huck	leberry I	No shrub la	aver		
	Livo troco dii i	ou oouur, c	5 12 BB11, 00	,,,,,	ia maon	100011 y . 1	to om ab it	ay 01.		