

Appendix AC – Wetland Delineation Report



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

File Name	Preparer	Editor	Checker	Accepter	Approver
OCW01_Oyster Creek Delineation Report_2022_01_21	DV, JC	ALD	KV, DB		



Table of Contents

1.	Project De	scription5				
2.	Methods					
2.1	Desktop R	eview				
2.2	Field Surv	ey8				
3.	Results					
3.1	Desktop R	eview				
3.1.1	OC WRA					
	3.1.1.1	Proposed Export Cable Route – Lacey and Ocean Township8				
	3.1.1.2	Proposed Onshore Substation at Oyster Creek Generating Station10				
	3.1.1.3	Proposed Export Cable Route - Island Beach State Park17				
3.2	Wetland D	elineation Field Survey22				
3.2.1	OC WRA.					
	3.2.1.1	Proposed Export Cable Route- Lacey and Ocean Townships22				
	3.2.1.2	Proposed Onshore Substation at Oyster Creek Generating Station29				
	3.2.1.3	Proposed Export Cable Route – Island Beach State Park				
3.3	Watercour	se Delineation Field Survey				
3.4	Wildlife					
3.4.1	OC WRA					
	3.4.1.1	Proposed Export Cable Route – Lacey and Ocean Townships				
	3.4.1.2	Proposed Onshore Substation at Oyster Creek Generation Station38				
	3.4.1.3	Proposed Export Cable Route – Island Beach State Park				
3.5	Species-Specific Assessment					
3.5.1	OC WRA					
4.	Literature	Cited				

List of Tables

Table 3.1.2-1.	Soil Map Units within the Wetland Review Areas	9
Table 3.1.2-2.	Summary of FEMA Flood Hazard Zones within the Wetland Review Areas	
Table 3.1.2-3.	Soil Map Units within the OCGS Site	11
Table 3.1.2-4.	Summary of FEMA Flood Hazard Zones within the OCGS Site	
Table 3.1.2-5.	Soil Map Units within the Wetland Review Areas	17
Table 3.1.2-6.	Summary of FEMA Flood Hazard Zones within the Wetland Review Areas	
Table 3.2.2-1.	Summary of Wetland Delineation Field Survey Results	23
Table 3.2.2-2.	Summary of Wetland Delineation Field Survey Results	
Table 3.2.2-2.	Summary of Wetland Delineation Field Survey Results	
	•	

An Ørsted & PSEG project

Table 3.2.2-3.	Summary of Wetland Delineation Field Survey Results	35
Table 3.3-1.	Summary of Watercourse Delineation Field Survey Results	
Table 3.6.2-1.	Federal and State endangered and threatened species with potential to occur within the	
	Oyster Creek Project Area.	39
Table 3.6.2-2.	State and Federal Listed birds that have the potential to pass through the Oyster Creek	
	Project Areas.	41

List of Figures

Project Overview Figure	7
NJDEP Watershed Management Areas Map.	.13
NJDEP Wetlands Map- OC WRA	.14
NWI Wetlands Map- OC WRA	.15
FEMA PFIRM Flood Hazard Area Map- OC WRA	.16
WMA Map- IBSP	.18
NJDEP Wetlands Map- IBSP	.19
NWI Wetlands Map- IBSP	.20
FEMA PFIRM Flood Hazard Area Map- IBSP	.21
Field Survey Wetland Delineation Map – OC WRA	.27
Field Survey Wetland Delineation Map – OC WRA	.28
Delineated Wetlands and Watercourses Map- IBSP	.36
	Project Overview Figure NJDEP Watershed Management Areas Map. NJDEP Wetlands Map- OC WRA NWI Wetlands Map- OC WRA FEMA PFIRM Flood Hazard Area Map- OC WRA WMA Map- IBSP NJDEP Wetlands Map- IBSP NWI Wetlands Map- IBSP FEMA PFIRM Flood Hazard Area Map- IBSP Field Survey Wetland Delineation Map – OC WRA Field Survey Wetland Delineation Map – OC WRA Delineated Wetlands and Watercourses Map- IBSP

List of Appendices

- Attachment A. USDA NRCS Web Soil Survey Custom Soil Resource Report
- Attachment B. Site Photographs
- Attachment C. Letter of Interpretation (LOI) Approval 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 (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 oyster Creek to the south rhe 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.



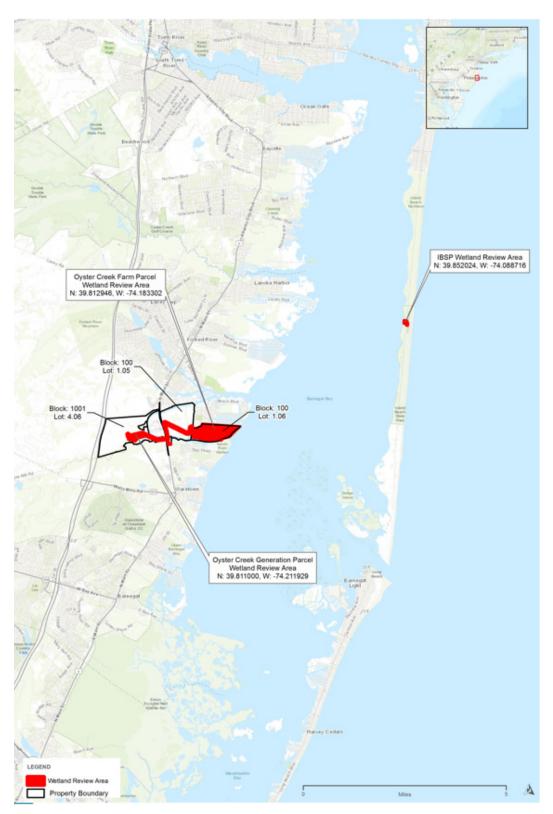


Figure 1-1. Project Overview Figure

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.

Ocean Wind

An Ørsted & PSEG project

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.

Map Unit Symbol	Map Unit Name	Percent of Site	Soil Series Component	% Component	Hydric Rating		
	Appoquinimink- Transquaking-Mispillion AptAv complex, 0 to 1 percent 0.1% slopes, very frequently flooded		Appoquinimink	40	Yes		
AptAv		Transquaking-Mispillion		0.10/	Transquaking	30	Yes
ΑριΑν		Mispillion	25	Yes			
		Minor Components	5	No			
LakB		46.3%	Lakehurst and similar soils	85	No		

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

An Ørsted & PSEG project

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
PssA	Psamments, 0 to 2	24.2%	Psamments, nearly level, and similar soils	85	No
	percent slopes	24.270	Minor components	15	Yes
PstAt	Psamments, 0 to 2 percent slopes	13.7%	Psammaquents, sulfidic substratum, frequently flooded, and similar soils	85	Yes
			Minor components	15	Yes
WHe1	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, mixed wetlands, mixed wooded deciduous dominated wetlands, mixed wetlands, mixed wooded deciduous dominated wetlands, mixed w

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.

Map Unit Symbol	Map Unit Name	Percent of Site	Soil Series Component	% Component	Hydric Rating
	Appoquinimink-		Appoquinimink	40	Yes
AptAv	Transquaking- Mispillion complex, 0	0.6%	Transquaking	30	Yes
ΑριΑν	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
	Northern Tidewater Area		Minor Components	10	No
	Downer loamy sand, 0 to 5 percent slopes,	0.9%	Downer and similar soils	80	No
DocBO	Northern Tidewater Area		Minor components	20	Yes/No
LakB	Lakehurst sand, 0 to 5	45.0%	Lakehurst and similar soils	85	No
Lakb	percent slopes	43.078	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

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

An Ørsted & PSEG project

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%	15.5%	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	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.



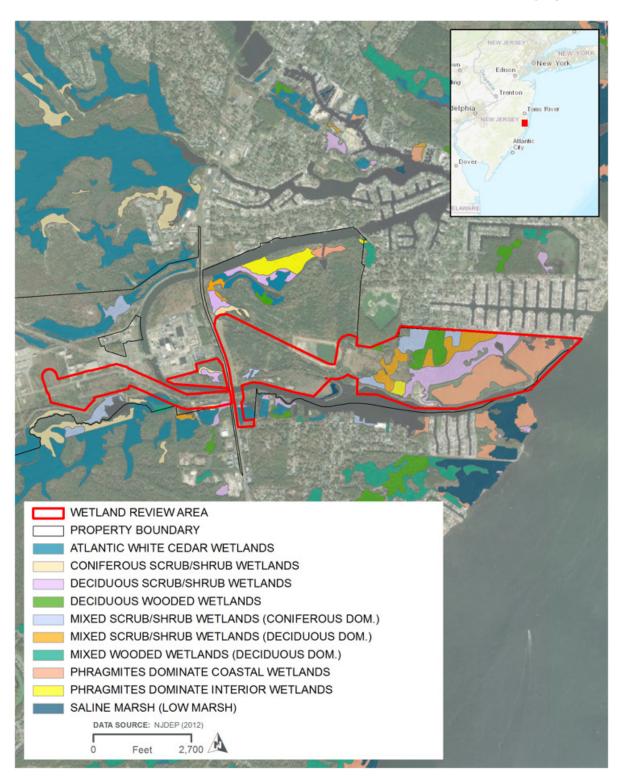


Figure 3.1.2-2. NJDEP Wetlands Map- OC WRA





Figure 3.1.2-3. NWI Wetlands Map- OC WRA



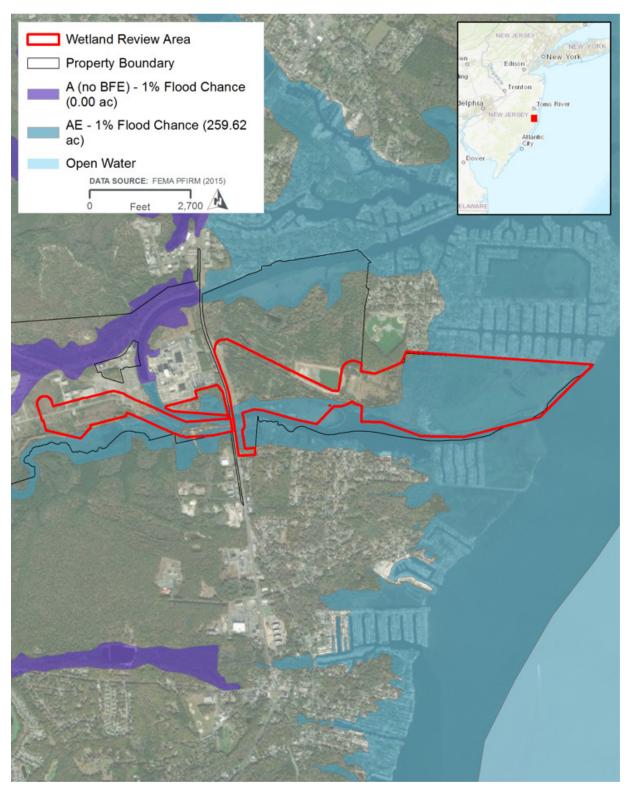


Figure 3.1.2-4. FEMA PFIRM Flood Hazard Area Map- OC WRA

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.

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

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



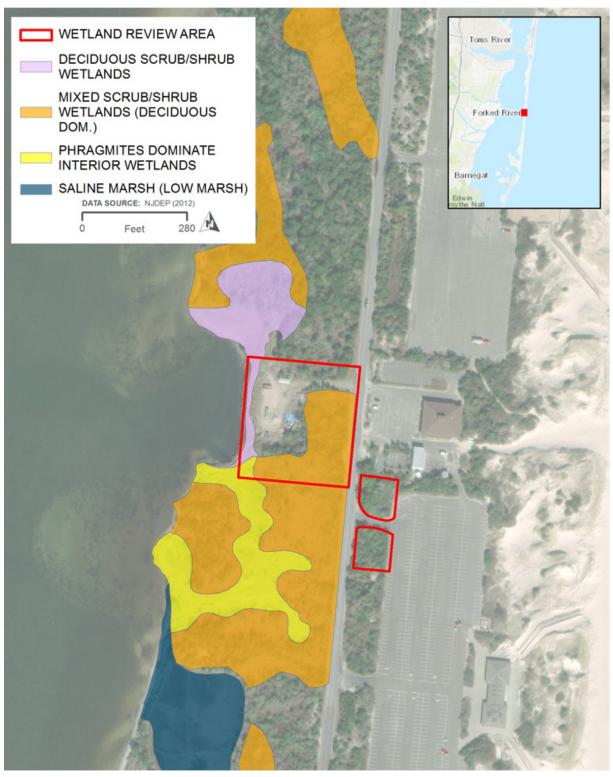


Figure 3.1.2-10. NJDEP Wetlands Map- IBSP



An Ørsted & PSEG project

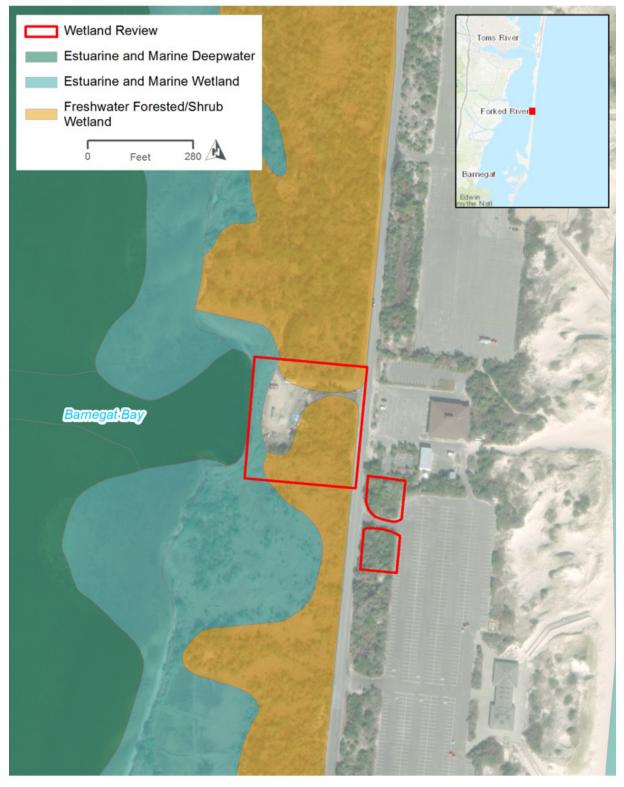


Figure 3.1.2-11. NWI Wetlands Map- IBSP



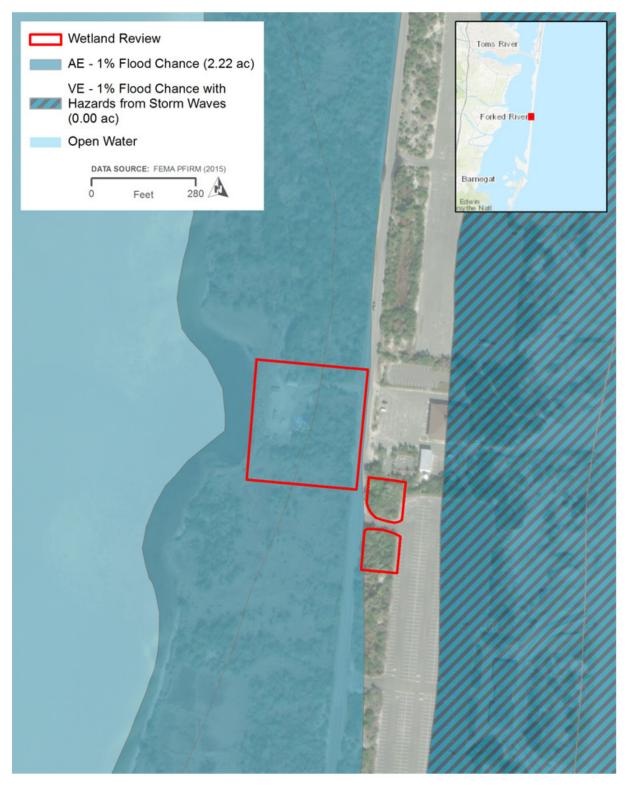


Figure 3.1.2-12. FEMA PFIRM Flood Hazard Area Map- IBSP

Ocean Wind An Ørsted & PSEG project

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.

<u>Wetland A</u> – 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.

<u>Wetland E</u> – 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.

Table 3.2.2-1. Summary of Wetland Delineation Field Survey Results

An Ørsted & PSEG project

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 water marks (B1), Vaccinium		Acer rubrum (FAC), Vaccinium corymbosum (FACW)	Hydrogen sulfide, sandy mucky mineral (S1, A4)	0.37	PFO1Bd
	155.81				

<u>Wetland K</u> – 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.

<u>Wetland L</u> – 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

Ocean Wind An Ørsted & PSEG project

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.

<u>Wetland M</u> – 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.

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
	Totals for Site					

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

FACW= Facultative Wetland species

FAC = Facultative species

OBL = Obligate species

FACU = Facultative Upland species

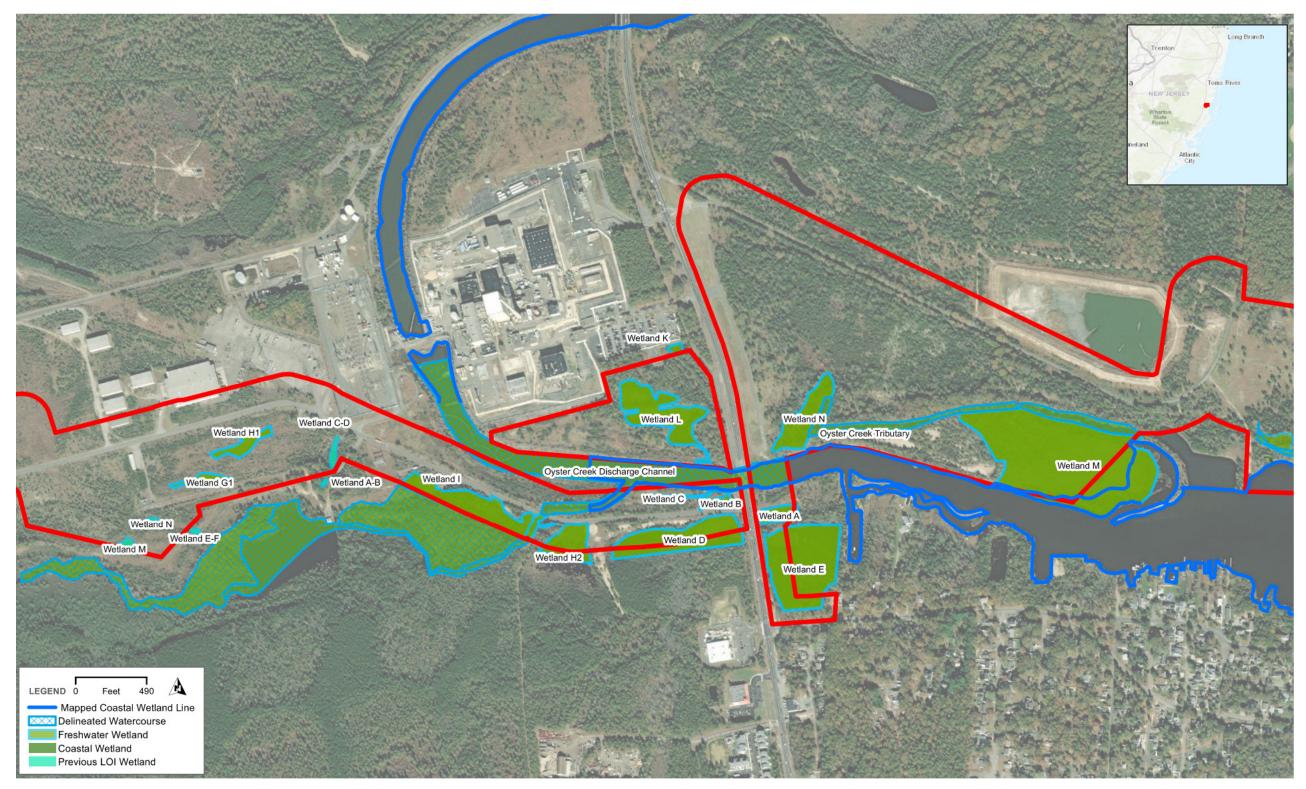


Figure 3.2.2-2. Field Survey Wetland Delineation Map – OC WRA





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



A CONTRACTOR	2001
K I/IN	Long Branch
	Cong brandi
Trenton	0
	7
a Ph	
	Toms River
	Toms River
NEW JERSEY	1-11
and the second	/=
Wharton State Forest	
Forest	
	2
heland	
Atlantic City	
- int	
A MARINA MARINA	

3.2.1.2 Proposed Onshore Substation at Oyster Creek Generating Station

<u>Wetland A</u> – 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.

<u>Wetland C</u> – 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.

Ocean Wind An Ørsted & PSEG project

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 fielddetermined 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.

Wetland E – 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.

Ocean Wind An Ørsted & PSEG project

<u>Wetland H1 (within generation site)</u> - 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.

<u>Wetland H2 (along access road)</u> – 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**.

<u>Wetland I -</u> 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).

<u>Wetland L</u> – 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



An Ørsted & PSEG project

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



An Ørsted & PSEG project

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					

FACW= Facultative Wetland species

FAC = Facultative species

OBL = Obligate species

FACU = Facultative Upland species

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

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.

<u>Wetland A</u> – 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.

<u>Wetland B</u>– 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

Ocean Wind An Ørsted & PSEG project

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.

<u>Wetland C</u> – 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.



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		

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

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





Ocean Wind An Ørsted & PSEG project

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 Ovster 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.

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	

Table 3.3-1. Summar	y of Watercourse Delineation Field Survey Results
---------------------	---

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 State-endangered 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.

Ocean Wind An Ørsted & PSEG project

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 ludovicianus*), 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

Ocean Wind

An Ørste	d & PSE	G proje	ect
----------	---------	---------	-----

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	-

Ocean Wind

An Ørsted & PSEG project

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

4. Literature Cited

- Beans, B.E., and Niles, L. (2003). Endangered and Threatened Wildlife of New Jersey. Rutgers University Press. P. 1-300.
- Conserve Wildlife Foundation of New Jersey. (2019). New Jersey endangered and threatened species field guide: Eastern box turtle. Accessed July 31, 2019 at www.conservewildlife nj.org/species/fieldguide/.
- Cowardin, L.M., Carter, V., Golet, F.C. and LaRoe, E.T. (1979). *Classification of Wetland and Deepwater Habitats of the United States.* Washington, D.C.: U.S. Department of the Interior, Fish and Wildlife Service.
- Environmental Laboratory. (1987). *Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1.* Vicksburg, MS: U.S. Army Engineer Waterways Experiment Station.
- Jersey Central Power & Light Company, (JCP&L) (1972). *Oyster Creek Nuclear Generating Station Environmental Report*. Jersey Central Power & Light Company, 300 Madison Ave. Morristown, NJ 07960.
- United States Department of Agriculture (USDA): Natural Resources Conservation Service. (2015). *Web Soil Survey*. Retrieved from United States Department of Agriculture, Natural Resources Conservation Service: <u>http://websoilsurvey.nrcs.usda.gov/. Accessed 8 June 2021.</u>
- U.S. Army Corps of Engineers (USACE). (2005). *Regulatory Guidance Letter No. 05-05: Ordinary High Water Mark Identification.* Don T. Riley, Major General, US Army, Director of Civil Works.
- U.S. Army Corps of Engineers. (2010). *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0).* ed. J.S. Wakely, R.W. Lichvar, and C.V. Noble, ERDC/EL TR-09-19. Vicksburg, MS: U.S. Army Engineer Research and Development Center.



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



United States Department of Agriculture

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.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Preface	2
How Soil Surveys Are Made	5
Soil Map	
Soil Map	9
Legend	10
Map Unit Legend	11
Map Unit Descriptions	11
Ocean County, New Jersey	13
HorsC—Hooksan fine sand, 2 to 10 percent slopes	13
WMa1—Mantoloking sand, 0 to 1 meter water depth, flat	14
References	16

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 L	EGEND	1	MAP INFORMATION
Area of Inte	erest (AOI) Area of Interest (AOI)	8	Spoil Area Stony Spot	The soil surveys that comprise your AOI were mapped at 1:24,000.
Soils	Soil Map Unit Polygons	0	Very Stony Spot	Warning: Soil Map may not be valid at this scale.
~	Soil Map Unit Lines	Ŷ	Wet Spot Other	Enlargement of maps beyond the scale of mapping can cause
Special F	Soil Map Unit Points Point Features	-	Special Line Features	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
ల	Blowout	Water Fea	ttures Streams and Canals	scale.
	Borrow Pit Clay Spot	Transport	ation Rails	Please rely on the bar scale on each map sheet for map measurements.
\$	Closed Depression Gravel Pit	~	Interstate Highways	Source of Map: Natural Resources Conservation Service
*	Gravelly Spot	~	US Routes Major Roads	Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)
0	Landfill Lava Flow	~	Local Roads	Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts
۸. بیند ج	Marsh or swamp Mine or Quarry	Backgrou	nd Aerial Photography	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.
0	Miscellaneous Water Perennial Water			This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.
× +	Rock Outcrop Saline Spot			Soil Survey Area: Ocean County, New Jersey Survey Area Data: Version 19, Aug 31, 2021
:: =	Sandy Spot Severely Eroded Spot			Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.
 ≽	Sinkhole Slide or Slip			Date(s) aerial images were photographed: Apr 13, 2021—Sep 14, 2021
ø	Sodic Spot			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

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

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.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/ nrcs/detail/national/soils/?cid=nrcs142p2_054262

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. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2 053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ home/?cid=nrcs142p2 053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/ detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/? cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf



United States Department of Agriculture



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.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Preface	2	
How Soil Surveys Are Made	5	
Soil Map	8	
Soil Map	9	
Legend		
Map Unit Legend		
Map Unit Descriptions		
Öcean County, New Jersey		
AptAv—Appoquinimink-Transquaking-Mispillion complex, 0 to 1		
percent slopes, very frequently flooded	14	
AtsAO—Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area		
BerAr—Berryland sand, 0 to 2 percent slopes, rarely flooded		
DocBO—Downer loamy sand, 0 to 5 percent slopes, Northern		
Tidewater Area	19	
LakB—Lakehurst sand, 0 to 5 percent slopes		
LasB—Lakewood sand, 0 to 5 percent slopes		
MakAt—Manahawkin muck, 0 to 2 percent slopes, frequently flooded		
PssA—Psamments, 0 to 2 percent slopes		
PstAt—Psammaquents, sulfidic substratum, 0 to 2 percent slopes,		
frequently flooded	27	
WATER—Water		
WHe1—Herring Creek mucky silt loam, 0 to 1 meter water depth		
Soil Information for All Uses		
Suitabilities and Limitations for Use		
Land Classifications		
Hydric Rating by Map Unit		
Soil Properties and Qualities		
Soil Physical Properties		
Organic Matter	36	
Saturated Hydraulic Conductivity (Ksat)		
Surface Texture		
Soil Qualities and Features	49	
Depth to Any Soil Restrictive Layer	49	
Drainage Class	53	
Hydrologic Soil Group	56	
Water Features	60	
Depth to Water Table	61	
Flooding Frequency Class		
Ponding Frequency Class		
References		

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.

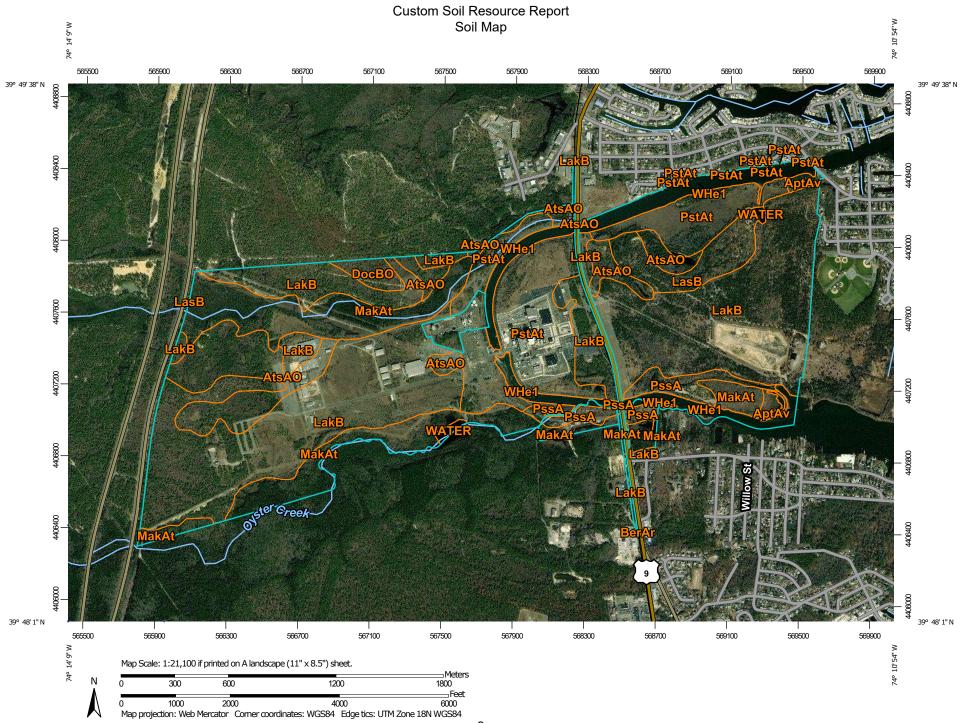
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree 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				MAP INFORMATION	
Area of Interes	t (AOI) ea of Interest (AOI)	8	Spoil Area Stony Spot	The soil surveys that comprise your AOI were mapped at 1:24,000.	
	il Map Unit Polygons il Map Unit Lines	Ø V	Very Stony Spot Wet Spot	Please rely on the bar scale on each map sheet for map measurements.	
	il Map Unit Points		Other Special Line Features	Source of Map: Natural Resources Conservation Service Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)	
⊠ Bor ¥ Cla ⊘ Clo	wout rrow Pit ry Spot used Depression avel Pit	Water Feat	Streams and Canals tion Rails Interstate Highways	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.	
👬 Gra	avelly Spot	* *	US Routes Major Roads Local Roads	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	
۸۵ ا	va Flow rsh or swamp ne or Quarry	Background	Ind Aerial Photography	Survey Area Data: Version 17, Sep 16, 2019 Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.	
O Per	scellaneous Water rennial Water ck Outcrop			Date(s) aerial images were photographed: Dec 31, 2009—Sep 16, 2017	
°,-°, Sar	line Spot ndy Spot			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.	
⊘ Sin }∋ Slic	verely Eroded Spot khole de or Slip				
20	de or Slip dic Spot				

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	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 *Cg - 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

Custom Soil Resource Report

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
2Oese1 - 36 to 43 inches: mucky peat
2Oese2 - 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 Custom Soil Resource Report

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.

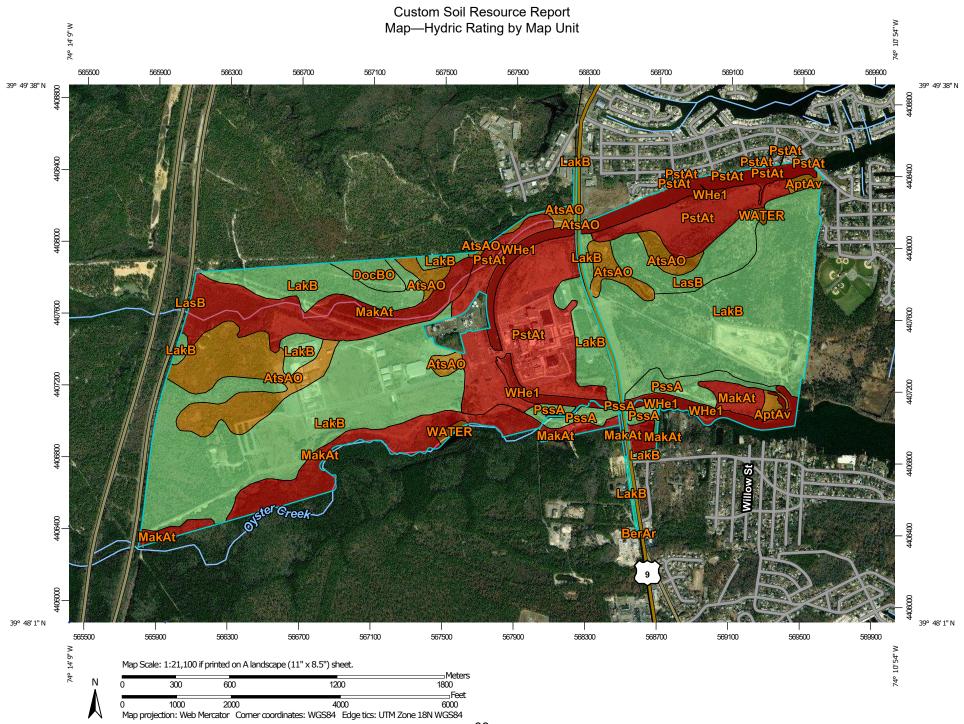
Federal Register. September 18, 2002. Hydric soils of the United States.

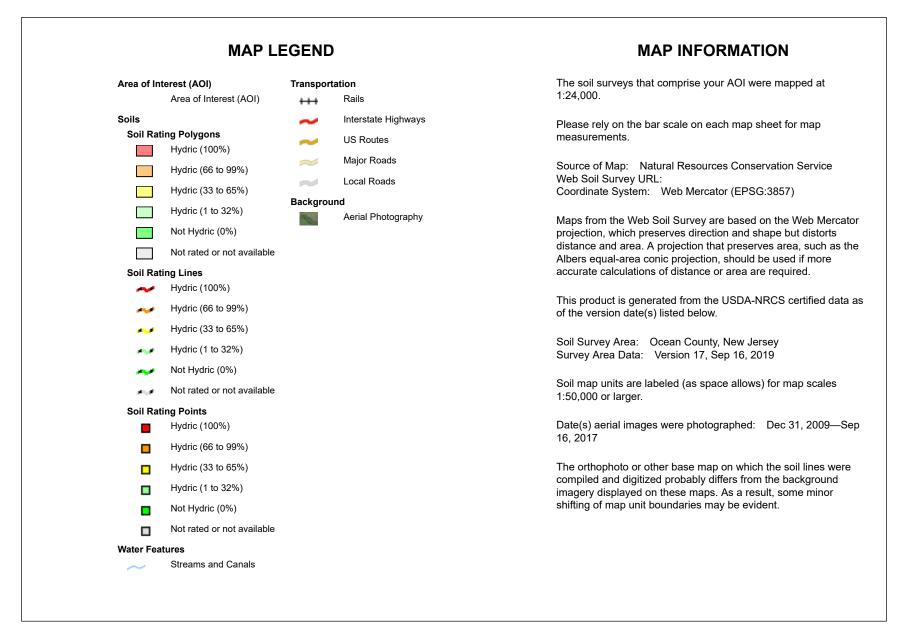
Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

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.





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

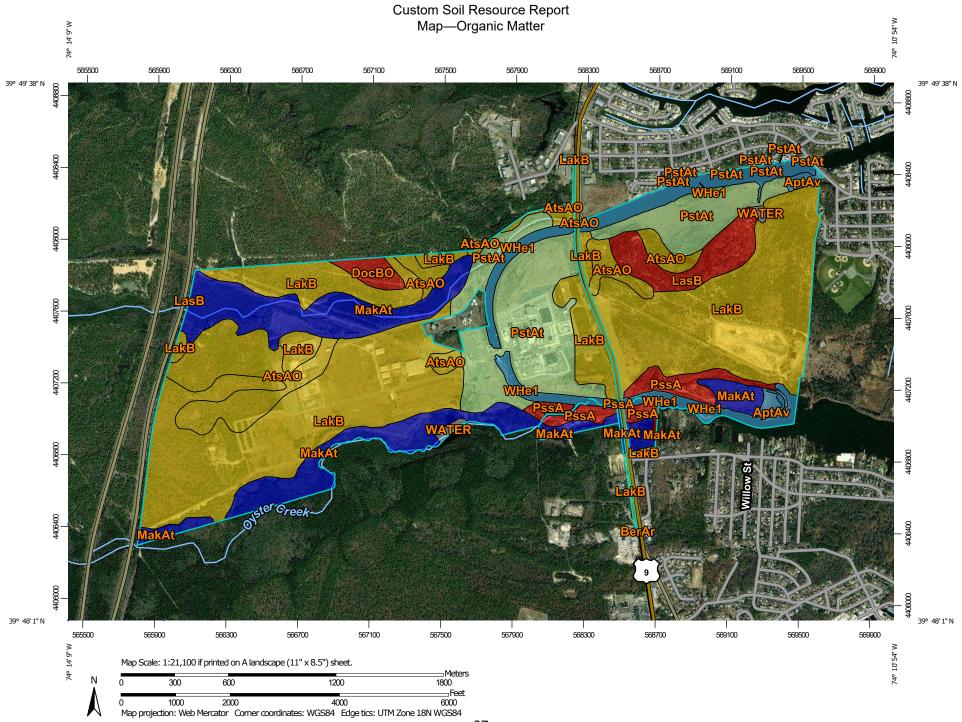
Soil Physical Properties are measured or inferred from direct observations in the field or laboratory. Examples of soil physical properties include percent clay, organic matter, saturated hydraulic conductivity, available water capacity, and bulk density.

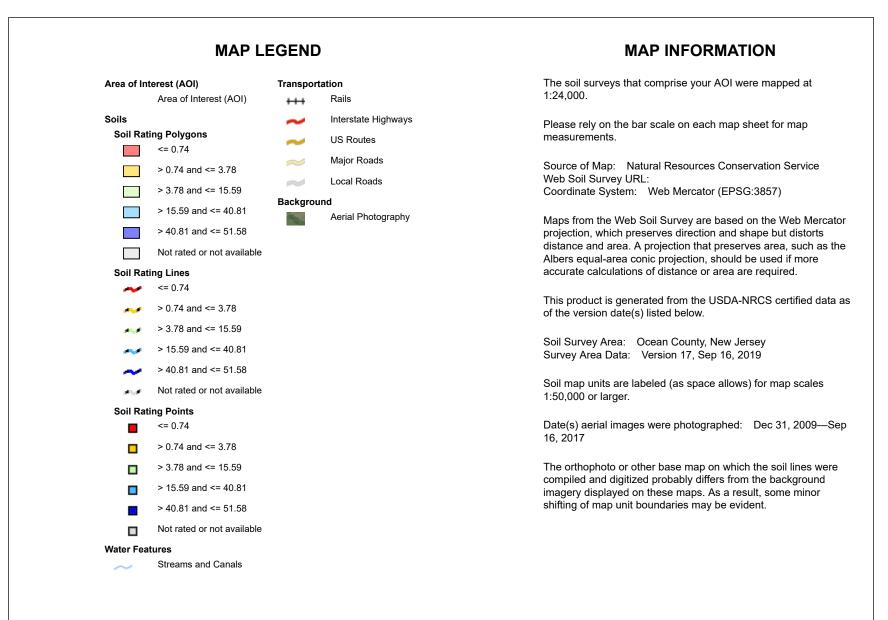
Organic Matter

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.





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	tAt 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	40.81	71.0	6.4%
Totals for Area of Inter	est	1,115.7	100.0%	

Rating Options—Organic Matter

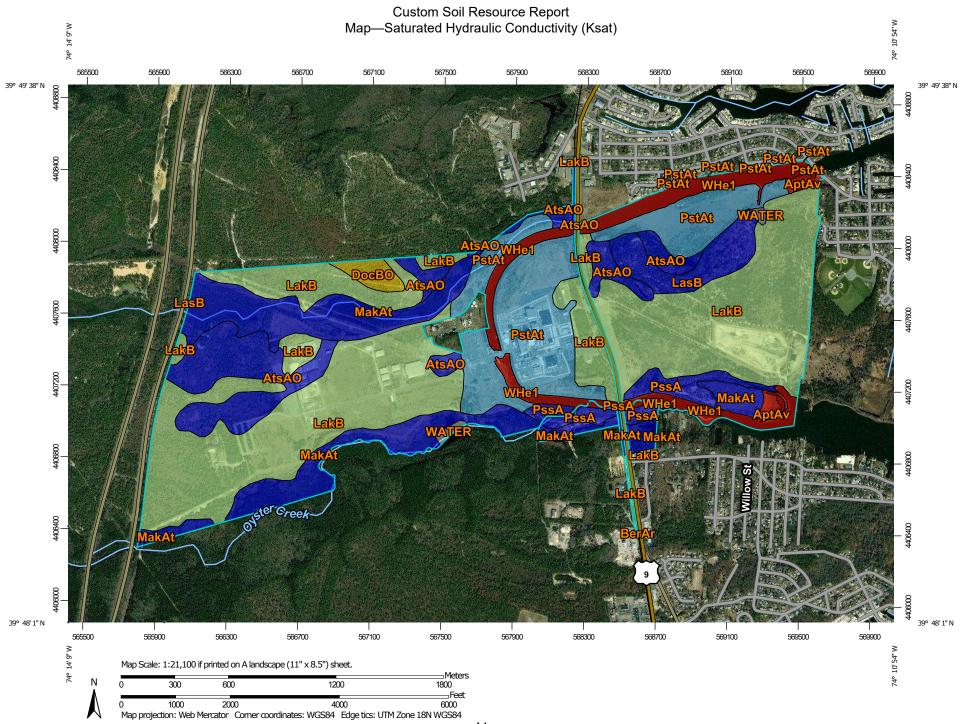
Units of Measure: percent Aggregation Method: Dominant Component Component Percent Cutoff: None Specified Tie-break Rule: Higher Interpret Nulls as Zero: No Layer Options (Horizon Aggregation Method): Depth Range (Weighted Average) Top Depth: 0 Bottom Depth: 50 Units of Measure: Inches

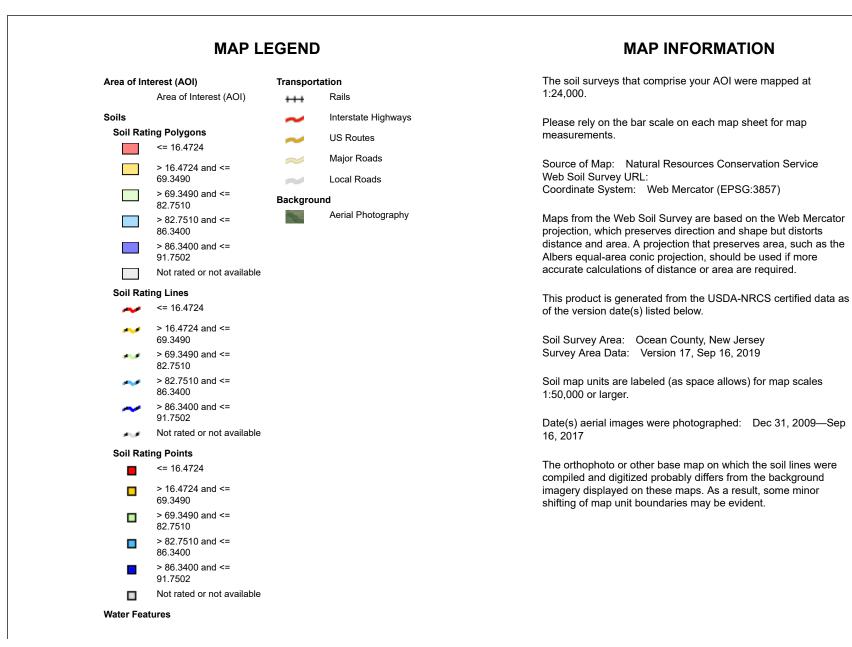
Saturated Hydraulic Conductivity (Ksat)

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 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%	

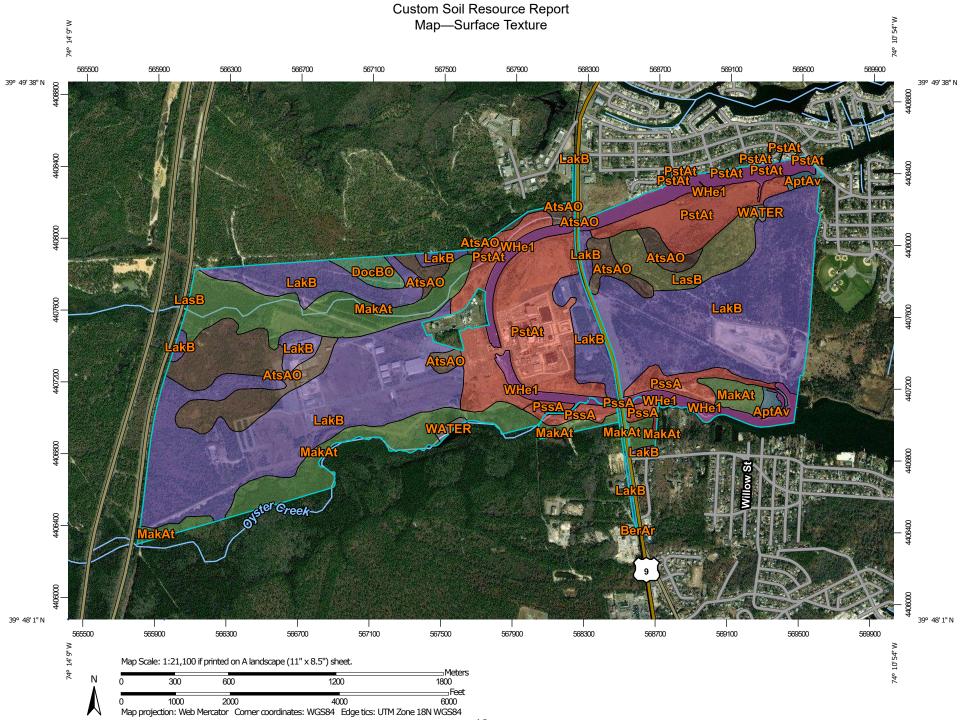
Rating Options—Saturated Hydraulic Conductivity (Ksat)

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 Bottom Depth: 50 Units of Measure: Inches

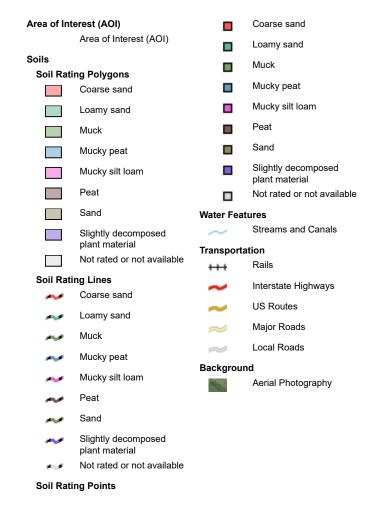
Surface Texture

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."



MAP LEGEND



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 Inter	est	1	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

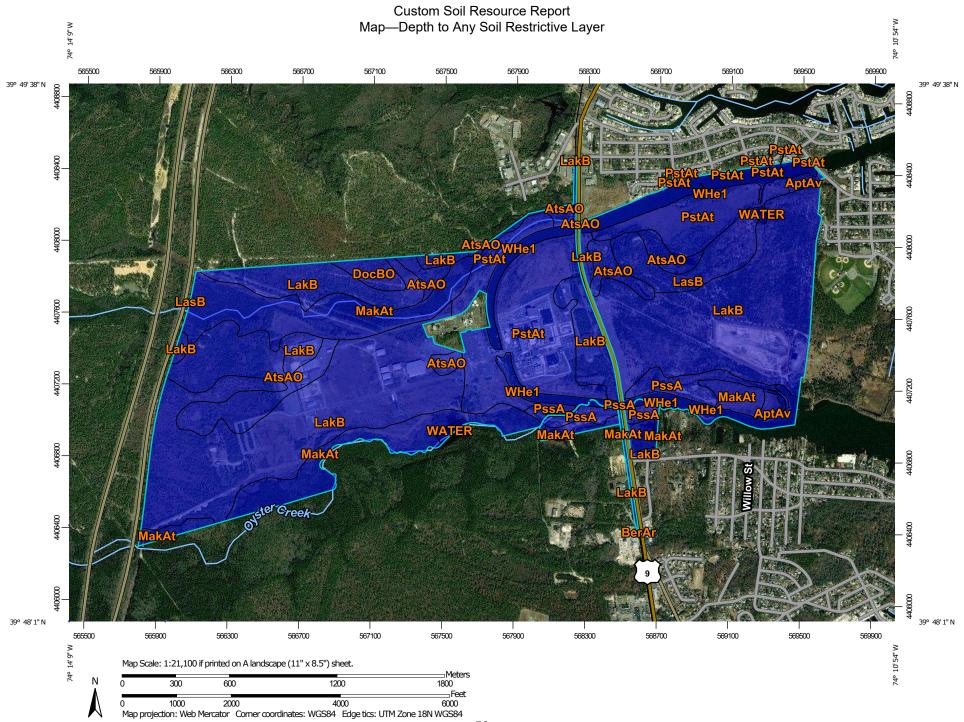
Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. 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.



	EGEND	MAP INFORMATION
Area of Interest (AOI) Area of Interest (AOI)	Not rated or not available	The soil surveys that comprise your AOI were mapped at 1:24,000.
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 25 - 50 25 - 50 25 - 50 20 - 100 100 - 150 20 - 150 20 - 200 20 - 200 20 - 200 20 - 100 20 - 100 20 - 100 20 - 100 20 - 100 20 - 200 20 - 200 20 - 200 20 - 200 20 - 200 20 - 200 20 - 200 20 - 200 20 - 200 20 - 200 20 - 200 20 - 200 20 - 200 20 - 200 20 - 200 20 - 200 20 - 200 20 - 200 20 - 200	 Not rated or not available Water Features Streams and Canals Transportation Rails US Routes Major Roads Cocal Roads Background Marial Photography	
 25 - 50 50 - 100 100 - 150 150 - 200 		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

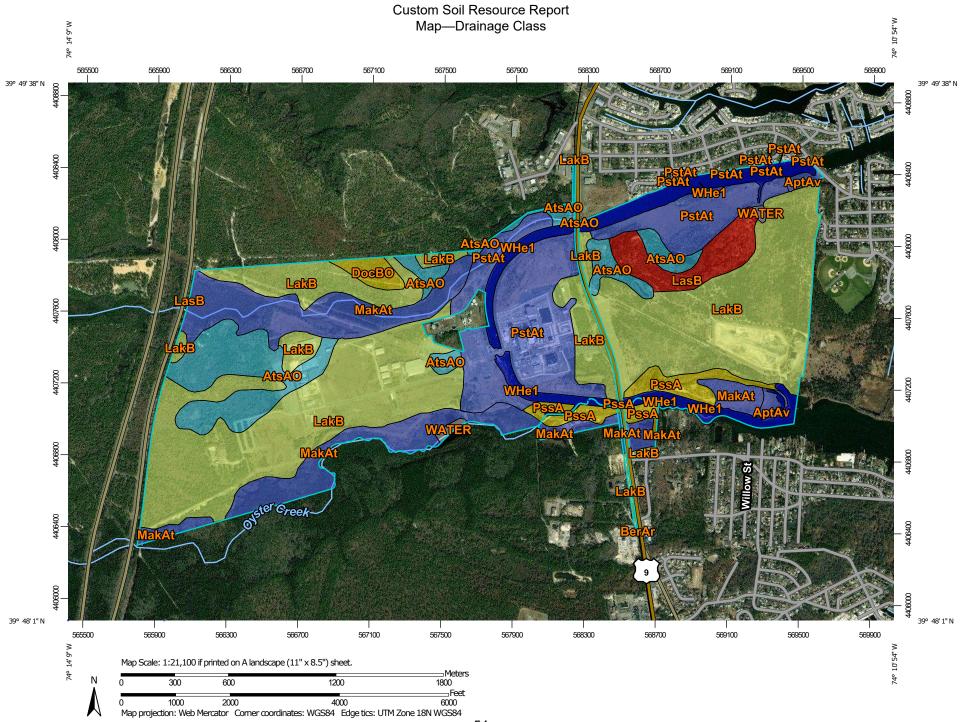
Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
AptAv	Appoquinimink- Transquaking- Mispillion complex, 0 to 1 percent slopes, very frequently flooded	>200	7.1	0.6%
AtsAO	Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area	>200	110.7	9.9%
BerAr	Berryland sand, 0 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 Inter	est	1	1,115.7	100.0%

Rating Options—Depth to Any Soil Restrictive Layer

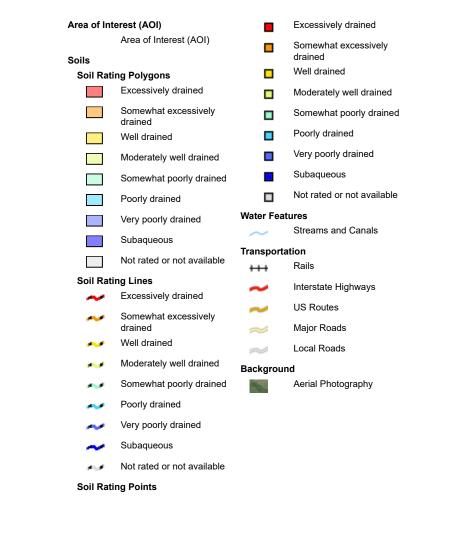
Units of Measure: centimeters Aggregation Method: Dominant Component Component Percent Cutoff: None Specified Tie-break Rule: Lower Interpret Nulls as Zero: No

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, and very poorly drained. These classes are defined in the "Soil Survey Manual."



MAP LEGEND



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—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 Inter	est		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

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:

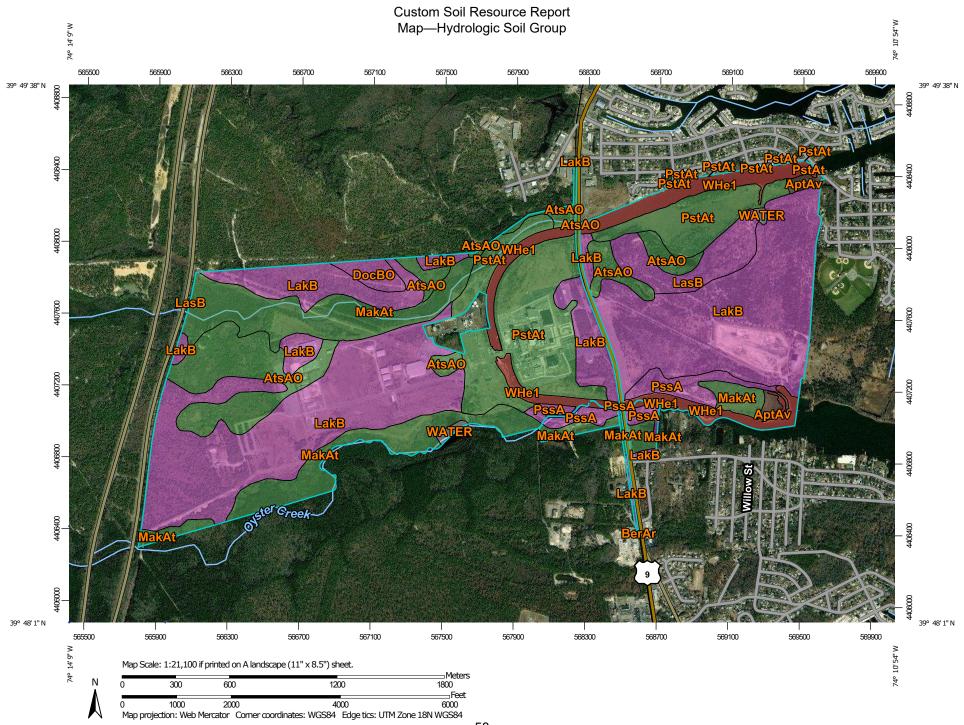
Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

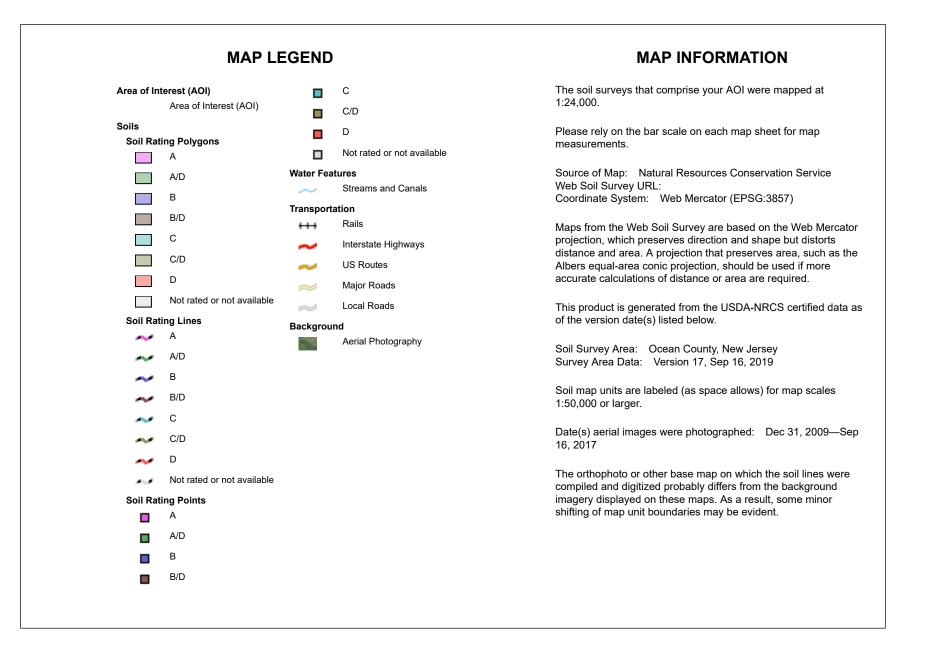
Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

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.





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	A	501.5	45.0%
LasB	Lakewood sand, 0 to 5 percent slopes	A	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	A	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 Inter	est	1	1,115.7	100.0%

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition Component Percent Cutoff: None Specified Tie-break Rule: Higher

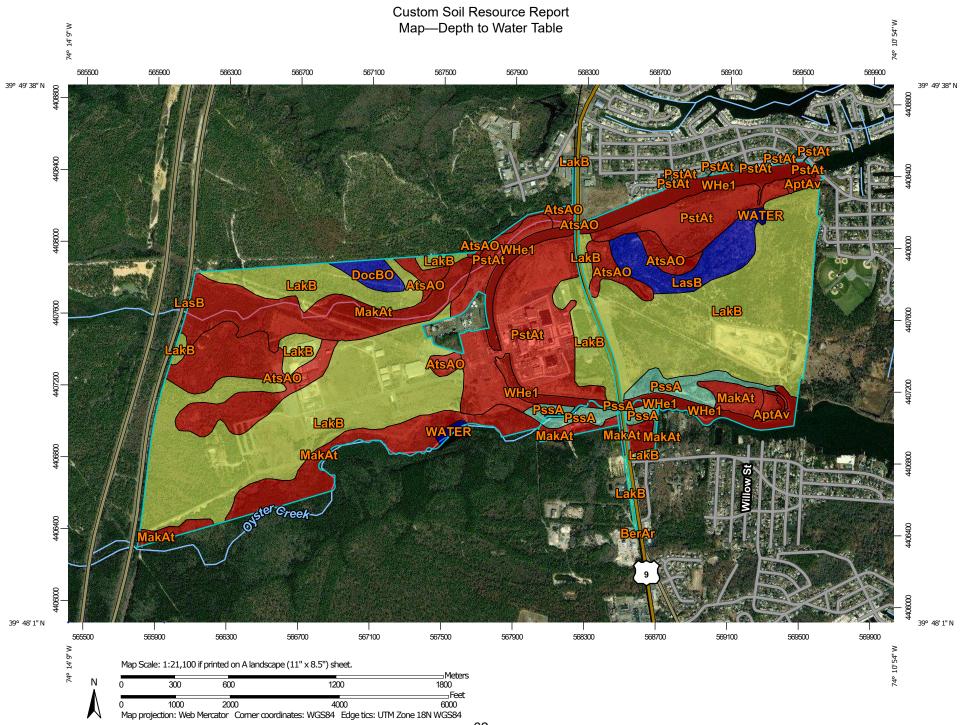
Water Features

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.



	EGEND	MAP INFORMATION
Area of Interest (AOI) Area of Interest (AOI)	Not rated or not available	The soil surveys that comprise your AOI were mapped at 1:24,000.
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 25 - 50 25 - 50 25 - 50 20 - 100 100 - 150 20 - 150 20 - 200 20 - 200 20 - 200 20 - 100 20 - 100 20 - 100 20 - 100 20 - 100 20 - 200 20 - 200 20 - 200 20 - 200 20 - 200 20 - 200 20 - 200 20 - 200 20 - 200 20 - 200 20 - 200 20 - 200 20 - 200 20 - 200 20 - 200 20 - 200 20 - 200 20 - 200 20 - 200	 Not rated or not available Water Features Streams and Canals Transportation Rails US Routes Major Roads Cocal Roads Background Marial Photography	
 25 - 50 50 - 100 100 - 150 150 - 200 		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 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 Inter	est		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.

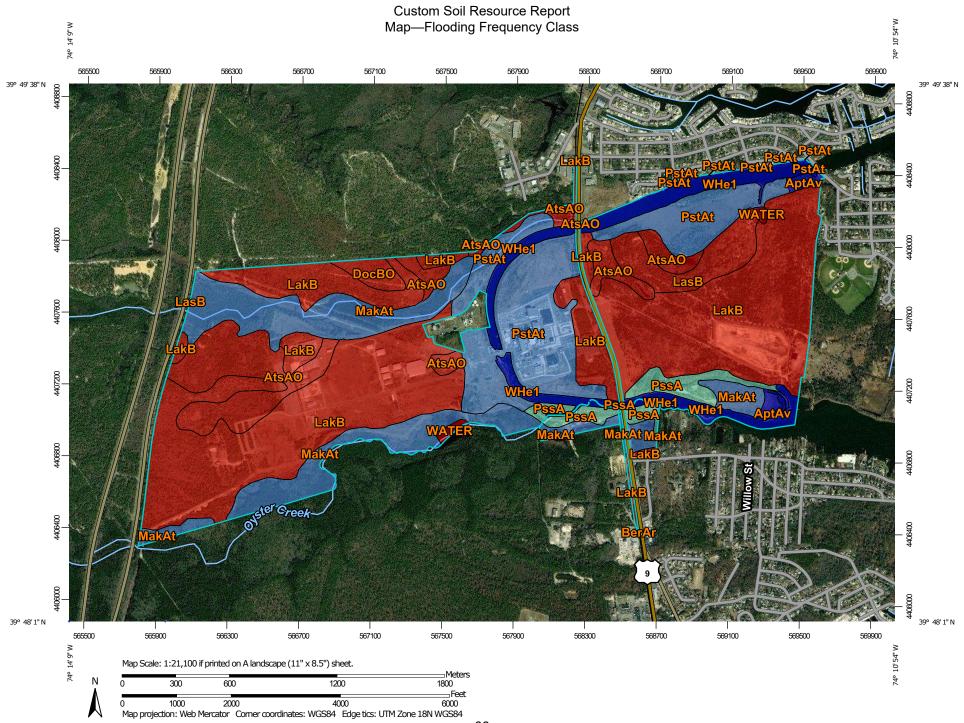
"Very rare" means that flooding is very unlikely but possible under extremely unusual weather conditions. The chance of flooding is less than 1 percent in any year.

"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 Inter	. ,		Not rated or not available	The soil surveys that comprise your AOI were mapped at 1:24,000.
	Area of Interest (AOI)	Water Fea	atures	1.27,000.
Soils		\sim	Streams and Canals	Please rely on the bar scale on each map sheet for map
	g Polygons	Transport	tation	measurements.
	None	+++	Rails	Source of Map: Natural Resources Conservation Service
	Very Rare	\sim	Interstate Highways	Web Soil Survey URL:
	Rare	~	US Routes	Coordinate System: Web Mercator (EPSG:3857)
	Occasional	~	Major Roads	Mana from the Web Sail Survey are based on the Web Mara
	Frequent	~	Local Roads	Maps from the Web Soil Survey are based on the Web Merc projection, which preserves direction and shape but distorts
	Very Frequent	Backgrou		distance and area. A projection that preserves area, such as
	Not rated or not available	Баскугоц	Aerial Photography	Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.
Soil Rating		100		
	None			This product is generated from the USDA-NRCS certified da of the version date(s) listed below.
	Very Rare			of the version date(s) listed below.
	Rare			Soil Survey Area: Ocean County, New Jersey
				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			
10.10	Not rated or not available			Date(s) aerial images were photographed: Dec 31, 2009— 16, 2017
Soil Rating	g Points			
	None			The orthophoto or other base map on which the soil lines we
	Very Rare			compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor
	Rare			shifting of map unit boundaries may be evident.
	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 Inter	est		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

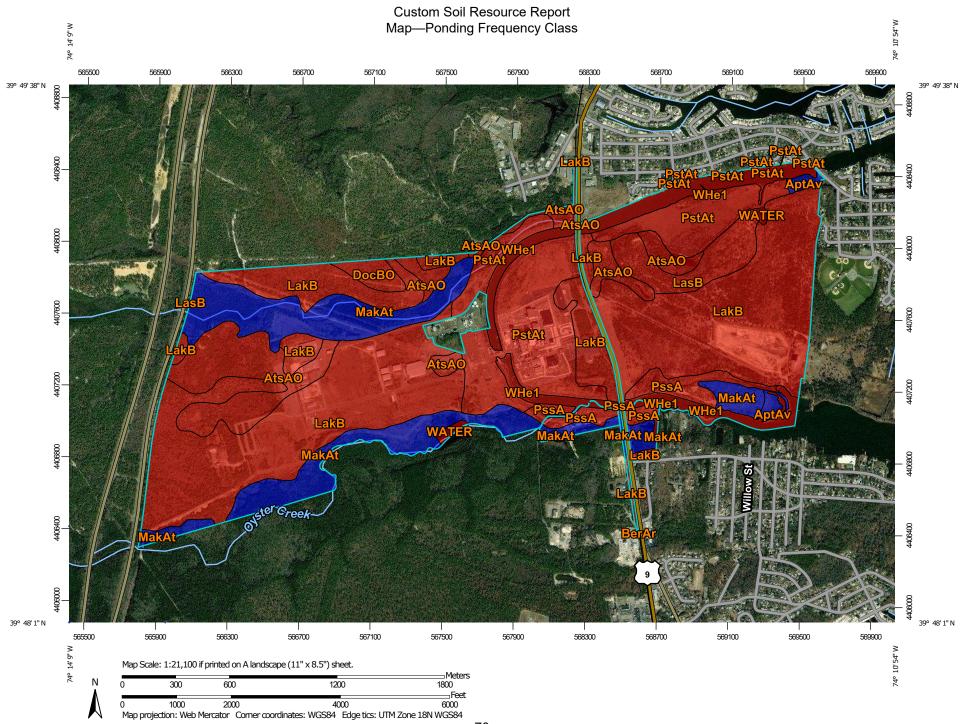
Ponding is standing water in a closed depression. The water is removed only by deep percolation, transpiration, or evaporation or by a combination of these processes. Ponding frequency classes are based on the number of times that ponding occurs over a given period. Frequency is expressed as none, rare,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



MAP	LEGEND	MAP INFORMATION	
Area of Interest (AOI)	JS Routes	The soil surveys that comprise your AOI were mapped at	
Area of Interest (AOI)	🧫 Major Roads	1:24,000.	
Soils	Local Roads	Please rely on the bar scale on each map sheet for map	
Soil Rating Polygons	Background	measurements.	
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 Mercat	
Not rated or not availab	le	projection, which preserves direction and shape but distorts	
Soil Rating Lines		distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more	
in None		accurate calculations of distance or area are required.	
🛹 Rare			
Cccasional		This product is generated from the USDA-NRCS certified data of the version date(s) listed below.	
🛹 Frequent			
Not rated or not availab	le	Soil Survey Area: Ocean County, New Jersey Survey Area Data: Version 17, Sep 16, 2019	
Soil Rating Points		, , , , , , , ,	
None None		Soil map units are labeled (as space allows) for map scales	
Rare		1:50,000 or larger.	
Occasional		Date(s) aerial images were photographed: Dec 31, 2009—S	
Frequent		16, 2017	
Not rated or not availab	le	The orthophoto or other base map on which the soil lines were	
Water Features		compiled and digitized probably differs from the background 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 Inter	est	1	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

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

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.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/ nrcs/detail/national/soils/?cid=nrcs142p2_054262

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. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ home/?cid=nrcs142p2 053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/ detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/ nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/? cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf



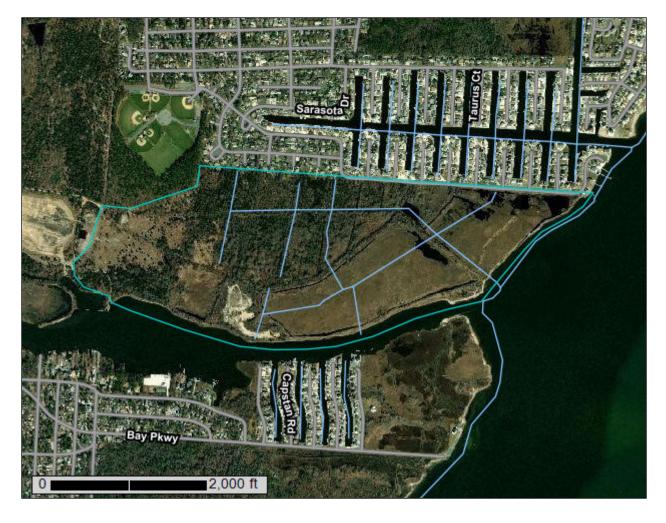
United States Department of Agriculture

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.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Preface	2
How Soil Surveys Are Made	5
Soil Map	
Soil Map	9
Legend	.10
Map Unit Legend	11
Map Unit Descriptions	.11
Ocean County, New Jersey	13
AptAv—Appoquinimink-Transquaking-Mispillion complex, 0 to 1	
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
WHe1—Herring Creek mucky silt loam, 0 to 1 meter water depth	.21
WPp1—Pasture Point loamy fine sand, 0 to 1 meter water depth	23
WTs2—Truitt-Southpoint complex, 1 to 2 meter water depth	.24
References	.27

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.

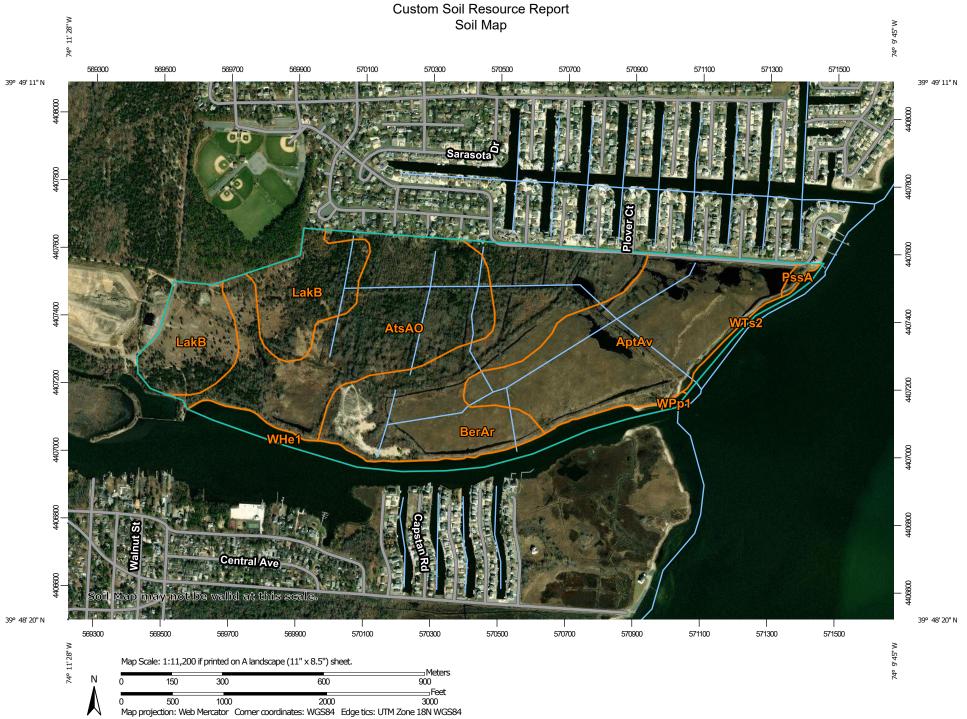
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree 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			MAP INFORMATION
	terest (AOI) Area of Interest (AOI)	8	Spoil Area Stony Spot	The soil surveys that comprise your AOI were mapped at 1:24,000.
Soils	Soil Map Unit Polygons Soil Map Unit Lines	© ∀	Very Stony Spot Wet Spot	Warning: Soil Map may not be valid at this scale.
	Soil Map Unit Points Point Features	۵ ••	Other Special Line Features	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
<u>ی</u>	Blowout Borrow Pit	Water Fea	Streams and Canals	scale.
※ ◇	Clay Spot Closed Depression	Transport	ation Rails Interstate Highways	Please rely on the bar scale on each map sheet for map measurements.
*	Gravel Pit Gravelly Spot	~	US Routes Major Roads	Source of Map: Natural Resources Conservation Service Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)
0 1	Landfill Lava Flow	Backgrou	Local Roads	Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts
<u>م</u> د ج	Marsh or swamp Mine or Quarry	No.	Aerial Photography	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.
0	Miscellaneous Water Perennial Water			This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.
× +	Rock Outcrop Saline Spot			Soil Survey Area: Ocean County, New Jersey Survey Area Data: Version 16, Sep 13, 2018
:. =	Sandy Spot Severely Eroded Spot			Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.
♦	Sinkhole Slide or Slip			Date(s) aerial images were photographed: Dec 31, 2009—Sep 16, 2017
ġ	Sodic Spot			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 *Cg - 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

Custom Soil Resource Report

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

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: 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 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

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

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

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.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/ nrcs/detail/national/soils/?cid=nrcs142p2_054262

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. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ home/?cid=nrcs142p2 053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/ detail/national/landuse/rangepasture/?cid=stelprdb1043084

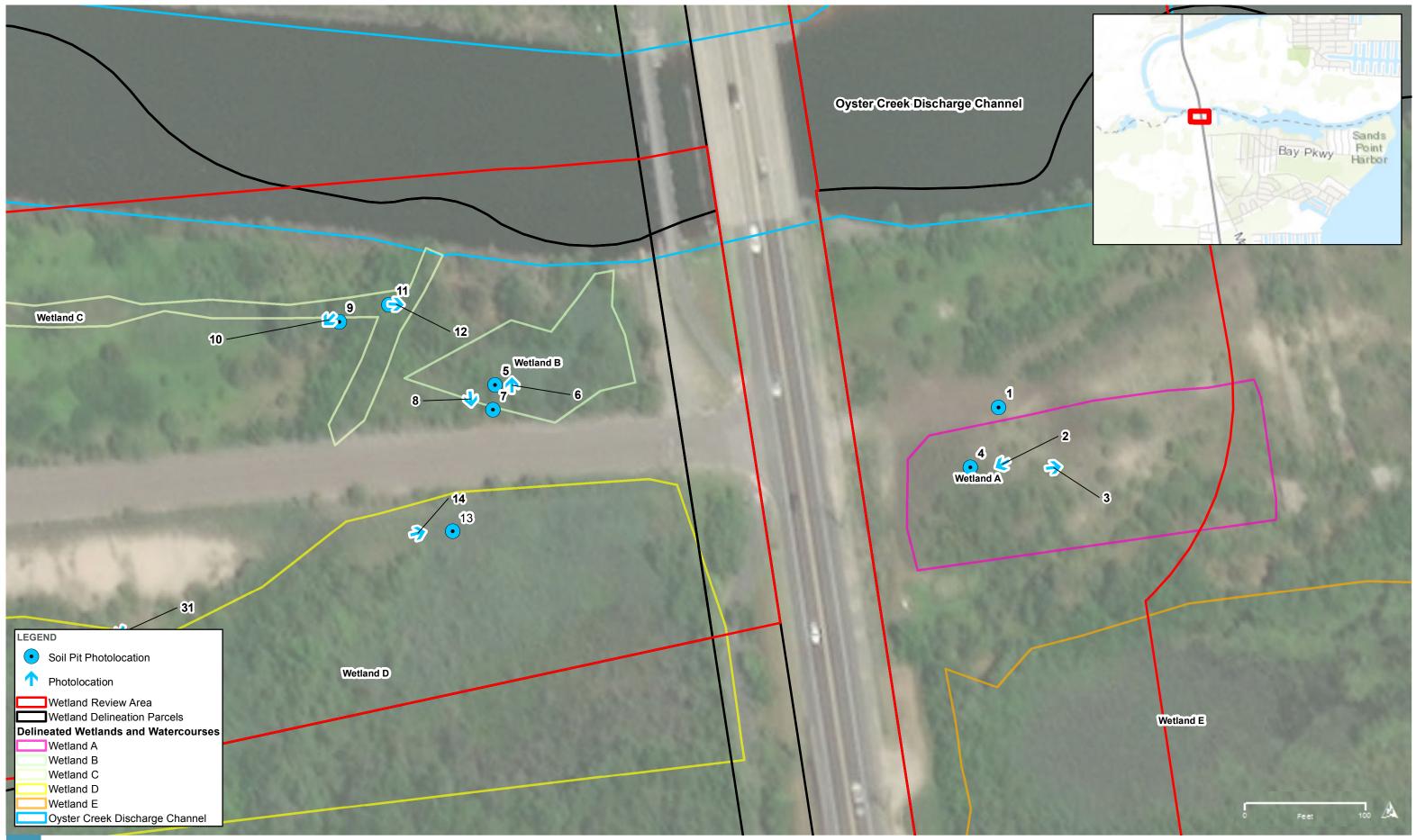
United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/ nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/? cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf



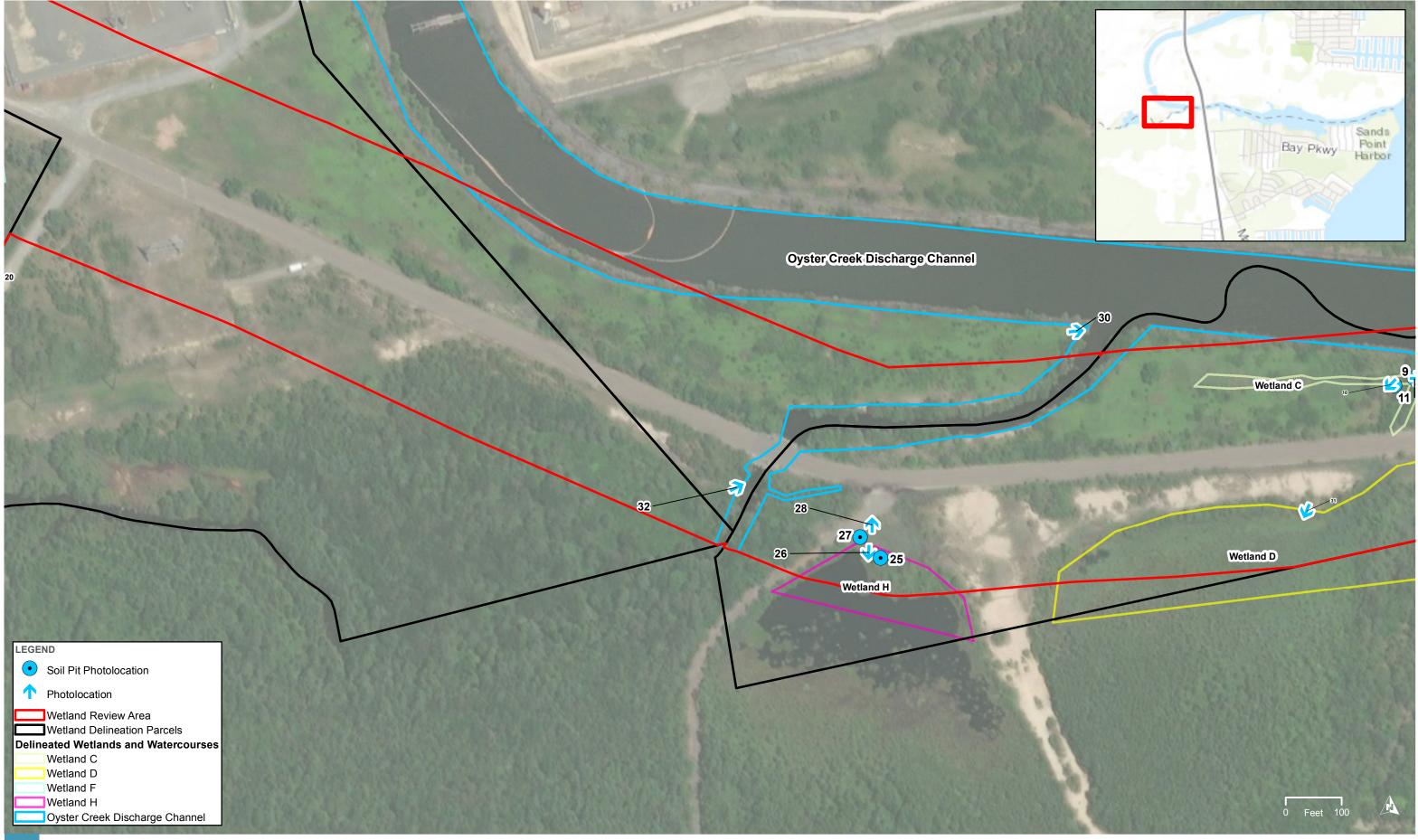
Attachment B. Site Photographs



HR Orsted

ATH: \\NJ-MAHWAH\ACTIVEPROJECTS\1099391099207817.0_GIS_MODELS\7.2_WORK_IN_PROGRESSIMAP_DOCS\DRAFT\WETLANDDELINEATION\2020_DELINEATION\OCW_APPC_11X17_PHOTOLOCATION_MAPMXD - USER: JLANGE - DATE: 12/8/2020

OCEAN WIND - OYSTER CREEK LANDING PHOTOLOCATION MAP APPENDIX C





ATH: \\NJ-MAHWAHIACTIVEPROJECTS\109839110092078/7.0_GIS_MODELSI7.2_WORK_IN_PROGRESSIMAP_DOCSIDRAFTWETLANDDELINEATION1/2020_DELINEATIONIOCW_APPC_11X17_PHOTOLOCATION_MAPMXD - USER: JLANGE - DATE: 12/8/2020

OCEAN WIND - OYSTER CREEK LANDING PHOTOLOCATION MAP APPENDIX C



HR Orsted

PATH: \\WJ-MAHWAHACTVEPROJECTS\10993910092078\7.0_GB_MODELS\7.2_WORK_IN_PROGRESS\MAP_DOCS\DRAFT\WETLANDDELINEATION\2020_DELINEATION\COC_APPC_11X17_PHOTOLOCATION_MAPMXD - USER: JLANGE - DATE: 12/8/2020

APPENDIX C



FX Orsted

PATH: \\NJ-MAHWAHACTIVEPROJECTS\1099391099207817.0_GIS_MODELS\7.2_WORK_IN_PROGRESSIMAP_DOCS\DRAFT\WETLANDDELINEATION\2020_DELINEATION\0CW_APPC_11X17_PHOTOLOCATION_MAPMXD - USER: JLANGE - DATE: 12/8/2020

OCEAN WIND - OYSTER CREEK LANDING PHOTOLOCATION MAP APPENDIX C



Photo 1: Photo of upland soil profile outside of Wetland A.



Photo 2: Photo of Wetland A vegetation.

Orsted Ocean Wind Project

Wetland Delineation - Oyster Creek Photography

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

 $\label{eq:c:lusers} C: \label{eq:c:lusers} C: \label{eq:c:lusers}$



Photo 3: Photo of Wetland A vegetation facing east.



Photo 4: Photo of Wetland A soil profile.

 Orsted Ocean Wind Project
 Wetland Delineation - Oyster Creek
 DATE:
 05/08/20
 PHOTO

 Orsted Ocean Wind Project
 Wetland Delineation - Oyster Creek
 CREATED BY:
 JC

 REVIEWED BY:
 DB
 JOB NO:
 10092078

C:\Users\jlange\Documents\Orsted\Wetland Delineation_2020-04\Photos\Orsted_Wetland Delineation_Photopages_2020.xlsx



Photo 5: Photo of Wetland B soil pit location.



Photo 6: Photo of Wetland B vegetation.

Orsted Ocean Wind Project

DATE:	05/08/20	РНОТО
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	РНОТО
Orsted Ocean Wind Proiect	···· · · · · · · · · · · · · · · · · ·	CREATED BY:	JC	7 and 8
Orsted Ocean Wind Project		REVIEWED BY:	DB	
		JOB NO:	10092078	



Photo 9: Photo of Wetland C upland soil profile.



Photo 10: Photo of Wetland C upland vegetation.

Orsted Ocean Wind Project		DATE:	05/08/20	рното
	Wetland Delineation - Oyster Creek	CREATED BY:	JC	
	Photography	REVIEWED BY:	DB	9 and 10
		JOB NO:	10092078	

C:\Users\jlange\Documents\Orsted\Wetland Delineation_2020-04\Photos\Orsted_Wetland Delineation_Photopages_2020.xlsx



Photo 11: Photo of Wetland C soil pit location.



Photo 12: Photo of Wetland C vegetation.

Orsted Ocean Wind Project

DATE:	05/08/20	РНОТО
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.

Orsted Ocean Wind Project

DATE:	05/08/20	РНОТО
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.

Orsted Ocean Wind Project

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





Photo 19: Photo of Wetland F soil profile.



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

Orsted Ocean Wind Project

Wetland Delineation - Oyster Creek Photography

DATE:	05/08/20	РНОТО
CREATED BY:	JC	
REVIEWED BY:	DB	19 and 20
JOB NO:	10092078	



Photo 21: Photo of Wetland G soil profile.



Photo 22: Photo of Wetland G1 vegetation.

Wetland Delineation - Oyster Creek Photography

DATE:	05/08/20	РНОТО
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	РНОТО
CREATED BY:	JC	
REVIEWED BY:	DB	23 and 24
JOB NO:	10092078	



Photo 25: Photo of Wetland H soil profile.



Photo 26: Photo of Wetland H vegetation.

Wetland Delineation - Oyster Creek Photography

DATE:	05/08/20	РНОТО
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.

Wetland Delineation - Oyster Creek Photography

DATE:	05/08/20	РНОТО
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.



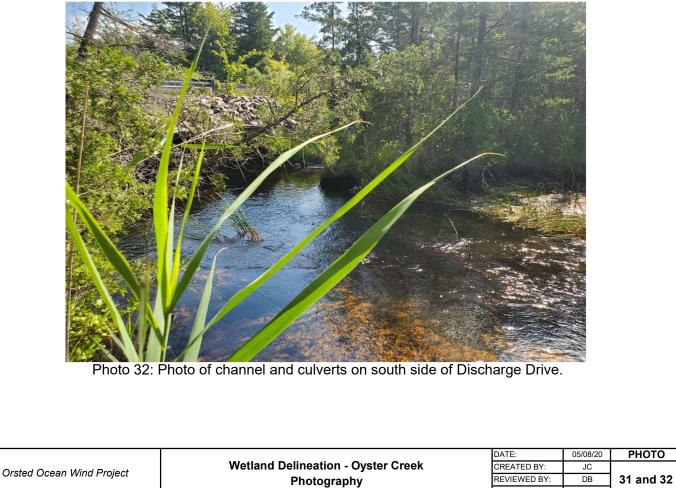
Photo 30: Photo of channel entrance connecting to Oyster Creek.

Wetland Delineation - Oyster Creek Photography

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



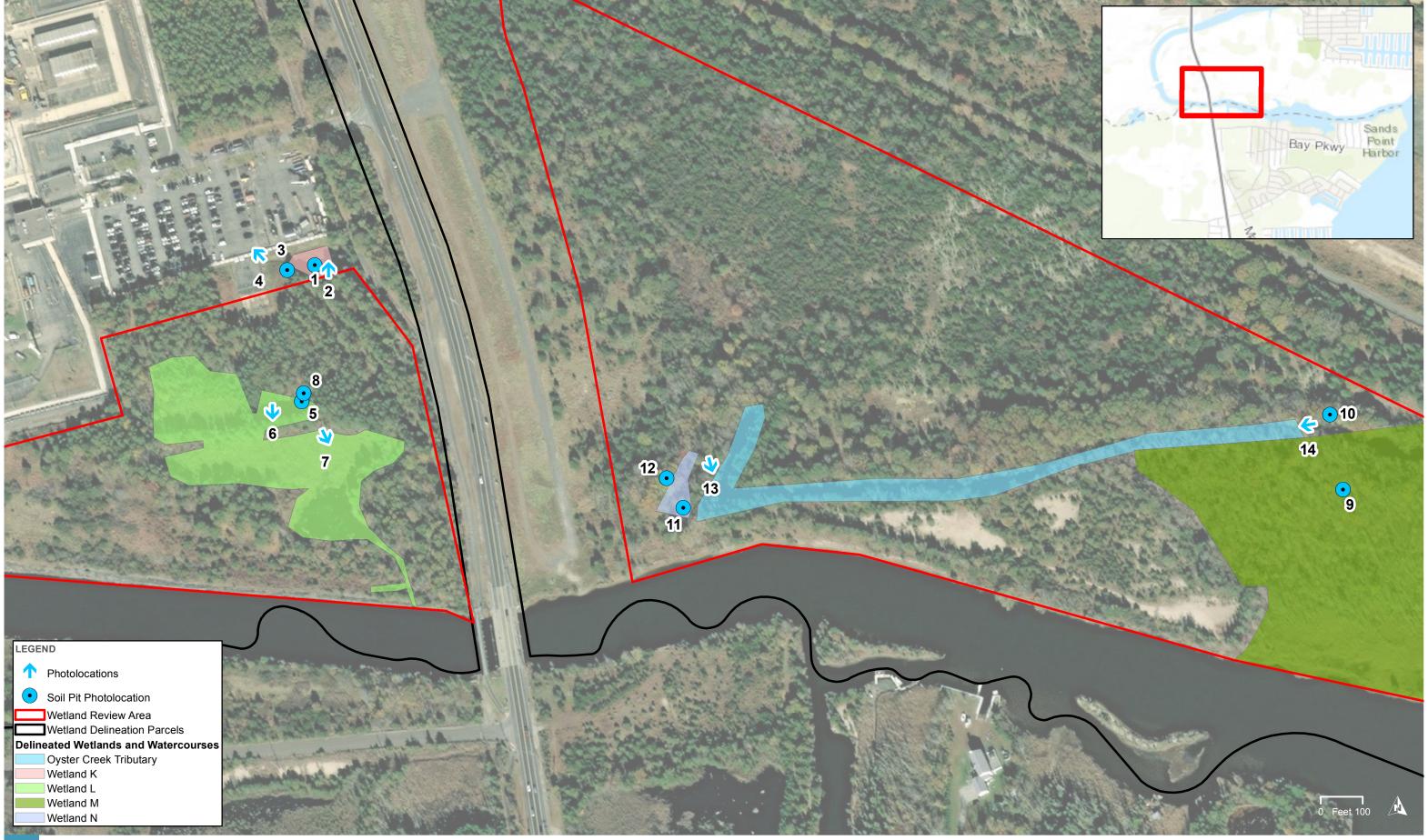
Photo 31: Photo of Wetland D on southern edge of Holtec property.



JOB NO:

10092078

C:\Users\jlange\Documents\Orsted\Wetland Delineation_2020-04\Photos\Orsted_Wetland Delineation_Photopages_2020.xlsx



HR Orsted

I: WN-MAHWAHACTVEPROJECTS:1099391(0092076/7.0_GIS_MODELS/7.2_WORK_IN_PROGRESSWAP_DOCS/DRAFT/WETLANDDELINEATION/2021_DELINEATION/OCW_APPC_11X17_PHOTOLOCATION_MAPMXD - USER: JLANGE - DATE: 6/8/2021

OCEAN WIND - OYSTER CREEK LANDING PHOTOLOCATION MAP APPENDIX C

OCW_WETLAND AND WATERCOURSE DELINEATION REPORT



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



Photo 2: Photo of Wetland K vegetation.

Wetland Delineation - Oyster Creek Photography

DATE:	05/08/20	РНОТО
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.

Orsted Ocean Wind Project		DATE:	05/08/20	PHOTO
	Wetland Delineation - Oyster Creek	CREATED BY:	JC	
	Photography	REVIEWED BY:	DB	3 and 4
	5 1 3	JOB NO:	10092078	

 $C: \label{eq:constraint} C: \label{eq:constraint} C: \label{eq:constraint} Users \label{eq:constraint} Is a set of the set of the$



Photo 5: Photo of Wetland L soil pit location.



Photo 6: Photo of Wetland L vegetation.

Orsted Ocean Wind Project

Wetland Delineation - Oyster Creek Photography

DATE:	05/08/20	РНОТО
CREATED BY:	JC	
REVIEWED BY:	DB	5 and 6
Job No:	10092078	

C

IJ



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		DATE:	05/08/20	РНОТО
	Wetland Delineation - Oyster Creek	CREATED BY:	JC	
	Photography	REVIEWED BY:	DB	7 and 8
	0 1 7	JOB NO:	10092078	



Photo 9: Photo of Wetland M soil profile.



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

Orsted Ocean Wind Project				РНОТО
	Wetland Delineation - Oyster Creek	CREATED BY:	JC	
	Photography	REVIEWED BY:	DB	9 and 10
	017	JOB NO:	10092078	



Photo 11: Photo of Wetland N soil pit.



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

Orsted Ocean Wind Project		DATE:	05/08/20	рното
	Wetland Delineation - Oyster Creek	CREATED BY:	JC	
	Photography	REVIEWED BY:	DB	11 and 12
	5 1 7	JOB NO:	10092078	



Photo 13: Photo of Oyster Creek tributary.



Photo 14: Photo of Oyster Creek tributary.

Wetland Delineation - Oyster Creek Photography

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





OCEAN WIND - OYSTER CREEK LANDING DELINEATED WETLANDS AND WATERCOURSES PHOTOMAP

PATH: P:11099391/10092078/7.0_GIS_MODELS/7.2_WORK_IN_PROGRESS/MAP_DOCS/DRAFT/WETLANDDELINEATION/REPORTFIGURES/OCW_PHOTOMAP.MXD + USER: DBRIZZOL + DATE: 1/25/2022



Photo 1: Photo of Wetland A upland soil profile.



Photo 2: Photo of Wetland A upland vegetation.

Orsted Ocean	Wind Project
--------------	--------------

Wetland Delineation - Oyster Creek Landing Photography

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.

		DATE:	01/25/22	РНОТО
Orsted Ocean Wind Project	Wetland Delineation - Oyster Creek Landing	CREATED BY:	JC	
	Photography	REVIEWED BY:	ZL	3 and 4
		JOB NO:	10092078	



Photo 5: Photo of Wetland E soil pit location.

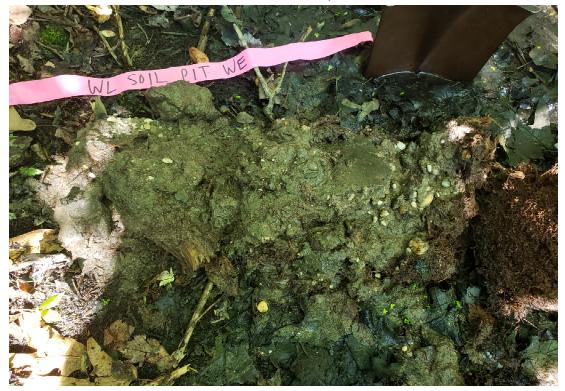


Photo 6: Photo of Wetland E soil profile.

Orsted Ocean Wind Project

Wetland Delineation - Oyster Creek Landing Photography

DATE:	01/25/22	PHOTO			
CREATED BY:	JC				
REVIEWED BY:	ZL	5 and 6			
IOB NO:	10092078				



Photo 7: Photo of Wetland E upland soil pit location.



Photo 8: Photo of Wetland E upland soil profile.

Orsted Ocean Wind Project

Wetland Delineation - Oyster Creek Landing Photography

DATE:		01/25/22	РНОТО
CREATED B	Y:	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.

Orsted Ocean Wind Project

Wetland Delineation - Oyster Creek Landing Photography

DATE:	01/25/22	РНОТО
CREATED BY:	JC	
REVIEWED BY:	ZL	9 and 10
JOB NO:	10092078	



Photo 11: Photo of Wetland A soil pit location.



Photo 12: Photo of Wetland A soils.

Orsted Ocean Wind Project

Wetland Delineation - Oyster Creek Landing Photography

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.

		DATE:	01/25/22	РНОТО
Orsted Ocean Wind Project	Wetland Delineation - Oyster Creek Landing	CREATED BY:	JC	
Orsted Ocean Wind Project	Photography	REVIEWED BY:	ZL	13 and 14
	0 1 9	JOB NO:	10092078	



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.

		DATE:	01/25/22	РНОТО
Orsted Ocean Wind Project	Wetland Delineation - Oyster Creek Landing	CREATED BY:	JC	
Orsted Ocean Wind Project	Photography	REVIEWED BY:	ZL	15 and 16
	0 1 5	JOB NO:	10092078	



HR Orsted

PATH: WMAHPI-FILE01IACTIVEPROJECTS110993911009207817.0_GIS_MODELS172_WORK_IN_PROGRESSMAP_DOCSIDRAFTILURP_PACKAGEIAPPH_WETLANDS\OCW_OC_WETLANDS_20220124_PHOTOLOCATION_IBSPMXD - USER: JLANGE - DATE: 1/24/2022

OCEAN WIND - OYSTER CREEK DELINEATED WETLANDS AND WATERCOURSES MAP

OCW_WETLAND AND WATERCOURSE DELINEATION REPORT



Photo 1: Photo facing northeast of Shore Road.



Photo 2: Photo of wetland soil profile of Wetland A

Orsted Ocean Wind Project Wetland Delineation - Island Beach State Park Photography	DATE:	12/08/21	РНОТО	
		CREATED BY:	DV	1 and 2
		REVIEWED BY:		
	JOB NO:	10092078		

 $c:\label{eq:linear} c:\label{eq:linear} c:\label{eq:linear} www.working\east01\d2448786\Orsted_IBSP\Wetland\Delineation_Photopages_2021_.xlsx$



Photo 3: Photo facing east of Wetland B.



Wetland Delineation - Island Beach State Park Photography

DATE:	12/08/21	PHOTO
CREATED BY:	DV	
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.

		DATE:	12/09/21	PHOTO
Orsted Ocean Wind Project	Wetland Delineation - Island Beach State Park	CREATED BY:	DV	
Orsted Ocean Wind Project	Photography	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	

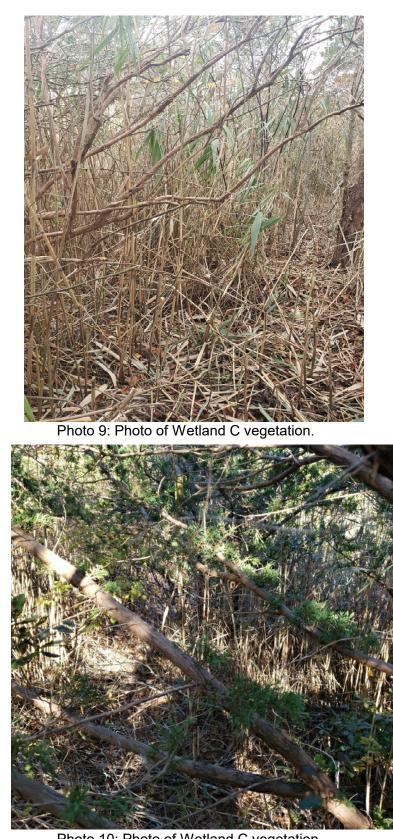


Photo 10: Photo of Wetland C vegetation.

Orsted Ocean Wind Project

Wetland Delineation - Island Beach State Park Photography

DATE:	12/08/21	РНОТО
CREATED BY:	DV	
REVIEWED BY:		9 and 10
JOB NO:	10092078	



Attachment C. Letter of Interpretation (LOI) Approval and Plan



State of New Jersey

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

CHRIS CHRISTIE Governor

KIM GUADAGNO Lt. Governor BOB MARTIN Commissioner

AUG 1 5 2017.

Kyle Mitton South Main Street Forked River, NJ 08731

> 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.

1

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.

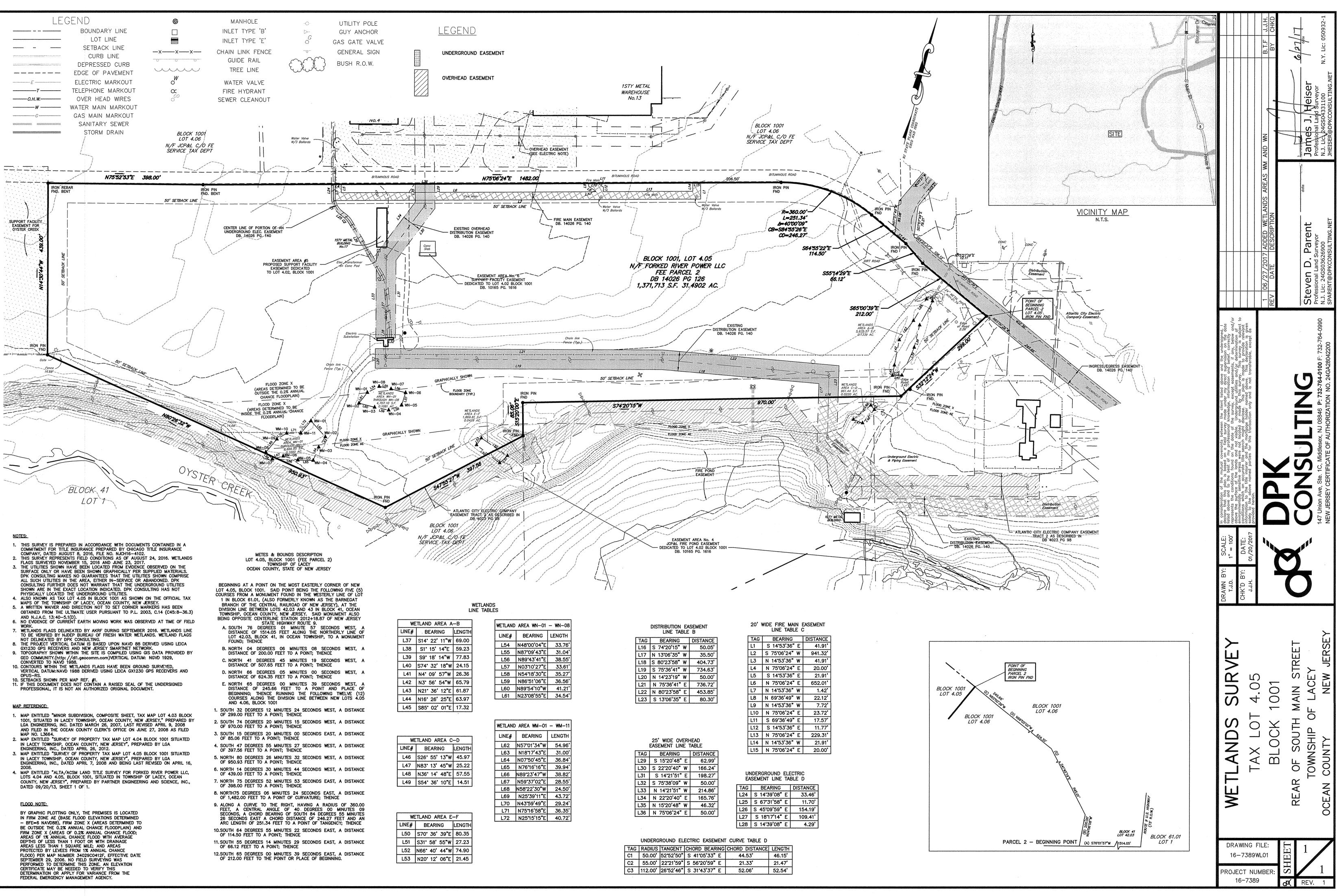
Please contact Lisa Dunne of our staff by e-mail at lisa.dunne@dep.nj.gov or by phone at (609) 777-0454 should you have any questions regarding this letter. Be sure to indicate the Department's file number in all communication.

Sincerely,

(R. Dabouski

Ryan J. Anderson, Manager Coastal Bureau Division of Land Use Regulation

c: Municipal Clerk Municipal Construction Official Agent (original)



-D
LENGTH
69.00
59.23
77.83
24.15
26.36
65.79
61.87
63.97

	69.00	
	59.23	
	77.83	
	24.15	
and the second s	26.36	
	65.79	
	61.87	
a second second	63.97	
	17.32	

>	D	
and the second second	LENGTH	
	45.97	
	25.22	
a comparison	57.55	
	14.51	

-F	
LENGTH	
80.35	
27.23	
74.90	
 21.45	

WETLAND	AREA WN-01	- WN-08
LINE#	BEARING	LENGTH
L54	N48'00'04"E	33.76'
L55	N87*09'43*E	31.04'
L56	N89*43'41"E	38.55'
L57	N0310'27"E	33.61'
L58	N5418'30"E	35.27'
L59	N86*51'06"E	36.56'
L60	N89'54'10"W	41.21'
L61	N23'08'55"E	34.54'

WETLAND AREA WM-01 - WM-11		
LINE#	BEARING	LENGTH
L62	N57'01'34"W	54.96'
L63	N1817'43"E	31.00'
L64	N07'50'45"E	36.84'
L65	N7616'16"E	39.94'
L66	N89'23'47"W	38.82'
L67	N59*37'02"E	28.55'
L68	N58'22'30"W	24.50'
L69	N25'39'11"E	43.72'
L70	N43*59'49"E	29.24'
L71	N7516'58"E	36.35'
L72	N2515'15"E	40.72'

TAG	BEARING	DISTANCE
L16	S 74'20'15" W	50.05'
L17	N 13'06'35" W	35.50'
L18	S 80°23'58" W	404.73'
L19	S 75'36'41" W	734.63'
L20	N 14°23'19" W	50.00'
L21	N 75'36'41" E	736.72'
L22	N 80°23'58" E	453.85'
L23	S 13*06'35" E	80.30'

		-
TAG	BEARING	DISTANCE
L29	S 15°20'48" E	62.99'
L30	S 22'20'40" W	166.24'
L31	S 14°21'51" E	198.27'
L32	S 75'38'09" W	50.00'
L33	N 14°21'51" W	214.86'
L34	N 22°20'40" E	165.76'
L35	N 15°20'48" W	46.32'
L36	N 75'06'24" E	50.00'

TAG	BEARING	DISTANCE
L1	S 14'53'36" E	41.91'
L2	S 75'06'24" W	941.32'
L3	N 14'53'36" W	41.91'
L4	N 75'06'24" E	20.00'
L5	S 14'53'36" E	21.91'
L6	N 75'06'24" E	652.01'
L7	N 14'53'36" W	1.42'
L8	N 69'36'49" W	22.12'
L9	N 14°53'36" W	7.72'
L10	N 75'06'24" E	23.72'
L11	S 69'36'49" E	17.57'
L12	S 14*53'36" E	11.77'
L13	N 75'06'24" E	229.31'
L14	N 14'53'36" W	21.91'
L15	N 75'06'24" E	20.00'

TAG	BEARING	DISTANCE
L24	S 14'39'08" E	33.46'
L25	S 67*31'58" E	11.70'
L26	S 45'09'59" E	154.19'
L27	S 1817'14" E	109.41'
L28	S 14'39'08" E	4.29'

TAG	RADIUS	TANGENT	CHORD BEARING	CHORD DISTANCE	LENGTH
C1	50.00'	52*52'50"	S 41'05'33" E	44.53'	46.15'
C2	55.00'	22'21'59"	S 56'20'59" E	21.33'	21.47'
C3	112.00'	26*52'46"	S 31'43'37" E	52.06'	52.54'



Attachment D. Wetland Delineation Plan



Attachment E Wetland Delineation Datasheets

Project/Site: Orsted	City/County: Ocea	In County Sampling Date: 6/24/2019		
Applicant/Owner: Ocean Wind - Farm Property		State: NJ Sampling Point: OP1-WA-UP		
Investigators: David Brizzolara Zachary Leh	imann Secti	on, Township, Range S T Lacey R		
Landform (hillslope, terrace, etc.): Terrace	Local Relief (concav	e, convex, none): None Slope(%) 0-2%		
Subregion (LRRor MLRA): LRR T Lat: 39.8	15067 Long	-74.166007 Datum: Decimal Degrees		
Soil Map Unit Name: Appoquinimink-Transquaking-Mispillion	complex	NWI Classification: E2EM5P		
Are climatic / hydrologic conditions on the site typical for this time	e of year? Yes X No	(If No, explain in Remarks)		
Are Vegetation, Soil, Hydrology, significant	ly disturbed? Are "N	Iormal Circumstances" present? Yes X No		
Are Vegetation, Soil, Hydrology, naturally p	rablemetica	eeded, explain any answers in Remarks.)		
CUMMARY OF FINDINGS Attach a site man ab	Υ.			
SUMMARY OF FINDINGS - Attach a site map sho	owing sampling point to	cations, transects, important features, etc.		
Hydrophytic Vegetation Present? Yes No X				
Hydric Soil Present? Yes No X	Is the Sampled Area within a Wetland?	Vac Na V		
Wetland Hydrology Present? Yes No X		Yes NoX		
Remarks:				
Observation point taken along roadside, potential historic fill				
HYDROLOGY				
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)		
Primary Indicators (minimum of one is required; check all that a	oply)	Surface Soil Cracks (B6)		
Surface Water (A1)	Fauna (B13)	Sparsely Vegetated Concave Surface (B8)		
	posits (B15) (LRR U)	Drainage Patterns (B10)		
	n Sulfide Odor (C1)	Moss Trim Lines (B16)		
	Rhizospheres along Living Roots (C	3) Dry-Season Water Table (C2)		
	e of Reduced Iron (C4)	Crayfish Burrows (C8)		
	ron Reduction in Tilled Soils (C6)	Saturation Visible on Aerial Imag.(C9)		
	ck Surface (C7)	Geomorphic Position (D2)		
	xplain 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 Dep	oth (inches):			
	oth (inches):			
	oth (inches):	Wetland Hydrology Present? Yes No_X		

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

(includes capillary fringe)

Remarks:

No wetland hydrology indicators present



Sampling Point: OP1-WA-UP

	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet:
Tree Stratum				Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A
Shrub Stratum (Plot size: 30 Ft)				
Rhus copallinum	60	Y	UPL	Total Number of Dominant
Rosa rugosa	30	Y	FACU	_ Species Across all Strata:5 (B
	90	_=Total Cover		Percent of Dominant Species20.0% (A That Are OBL, FACW, or FAC:
Herb Stratum (Plot size: <u>6 Ft</u>)				Prevalence Index Worksheet:
Solidago altissima Phragmites australis	40	<u>Y</u>	FACU FACW	Total % Cover of: Multiply by:
	50		TAGW	$\frac{1}{OBL \text{ species}} \qquad 0 \qquad \frac{1}{x 1 = 0}$
Vine Stratum (Dict circo, 20 Ft)		_=Total Cover		FACW species x 2 = 20
(PIOL SIZE: <u>30 FL</u>)				FAC species 15 x 3 =45
Lonicera japonica Toxicodendron radicans	30	- <u>Y</u> Y	FACU	
Parthenocissus quinquefolia	15 	– <u> </u>	FAC FACU	
	55	=Total Cover	1400	
		_=Total Cover		Column Totals:(A)(A)(A)
				Prevalence Index = B/A= 4.13
				Hydrophytic Vegetation Indicators:
				1 - Rapid Test for Hydrophytic Vegetation
				2 - Dominance Test > 50%
				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 ir (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 les 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, includir herbaceous vines, regardless of size. Includes woo plants, except woody vines, less than approximatel 3 ft (1 m) in height.
				Woody vine – All woody vines, regardless of height
				Hydrophytic
				Vegetation Present? Yes No X
narks: (Include photo numbers here or on a separate sh	eet.)			Variation Dracont?



Profile Desci	ription: (Des		depth ne	eeded to documen			confirm	the absence of Indicators.)	1
Depth		Matrix	24	<u> </u>		Features		<u> </u>	
(inches)	-	(moist)	%	Color (moist)	%	Type ¹		Texture	Remarks
0 to 5	10YR	3/1	50	10YR 6/1	50	С	М	SAND	Organics
5 to 12	10YR	3/4	100					SAND	
12 to 20	10YR	3/3	100					SAND	
¹ Type: C=Cor	ncentration, D	=Depletion,	RM=Red	luced Martix, CS=Co	overed o	r Coated	Sand Gra	ains. ² Location: PL=Por	re Lining, M=Matrix.
Stratified L	edon (A2) c (A3) Sulfide (A4)			 Polyvalue Below 3 Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Ma Depleted Matrix (I Redox Dark Surfa Depleted Dark Su 	e (S9) (LR neral (F1) atrix (F2) F3) ace (F6)	R S, T, U) (LRR O)	Τ, Ο)	 Piedmont Floodplain Anomalous Bright Loa (MLRA 153B) 	R O) R S) (outside MLRA 150A,B) Soils (F19) (LRR P, S, T) amy Soils (F20)
					•	, ,		Red Parent Material (rface (TF12) (LRR T, U)
Muck Presence (A8) (LRR U) Redox Depressions (F8) 1 cm Muck (A9) (LRR P, T) Mart (E10) (LRB L)							Other (Explain in Ren		
Image: Construction of the construc						 ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. A, 153C, 153D) 			
□ Restrict	ive Layer (i	f observe	d):						
Type:								Hydric Soil Present?	Yes No X
Depth (incl	nes):							,	
Remarks: No hydric soil i	indicators obser	rved							

Project/Site: Orsted		City/County: O	cean County	Sampling Date: 6/24/2019
Applicant/Owner: Ocean Wine	d - Farm Property		State: NJ	Sampling Point: OP2-WA-WET
Investigators: David Brizzolar	a Zachary Le	hmann Se	ection, Township, Range	S T Lacey R
Landform (hillslope, terrace, etc.):	Depression	Local Relief (con	cave, convex, none): Co	oncave Slope(%)
Subregion (LRRor MLRA): LRR	T Lat: 39.8	315017 Lo	ong: -74.165943	Datum: Decimal Degrees
Soil Map Unit Name: Appoqui	nimink-Transquaking-Mispillio	n complex	NWI Classifica	ation: E2EM5P
Are climatic / hydrologic condition	s on the site typical for this tim	e of year? Yes X	No (If No, expl	ain in Remarks)
Are Vegetation, Soil	_, Hydrology, significan	tly disturbed? Are	e "Normal Circumstances	" present? Yes X No
Are Vegetation, Soil		problematic?	f needed, explain any an	swers in Remarks.)
SUMMARY OF FINDINGS	5 - Attach a site map sh			ts, 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	within a wettand?	Yes	X No
wetland hydrology all present.				phytic vegetation, hydric soil, and
HYDROLOGY				
Wetland Hydrology Indicators: Primary Indicators (minimum of c □ Surface Water (A1) ✓ High Water Table (A2) ✓ Saturation (A3)	one is required; check all that a	Fauna (B13) posits (B15) (LRR U)	Surface	dicators (minimum of two required) Soil Cracks (B6) Vegetated Concave Surface (B8) Patterns (B10)
 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) 	Oxidized Presend Recent Thin Mu Other (E	en Sulfide Odor (C1) d Rhizospheres along Living Roots te of Reduced Iron (C4) Iron Reduction in Tilled Soils (C6) Jock Surface (C7) Explain in Remarks)	s (C3) Dry-Seat Crayfish Saturatic Geomor Shallow FAC-Net	m Lines (B16) son Water Table (C2) Burrows (C8) on Visible on Aerial Imag.(C9) ohic Position (D2) Aquitard (D3) utral Test (D5) um 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 De Yes X No De	epth (inches):	Wetland Hydrolog	gy Present? Yes <u>X</u> No
Remarks: Wetland hydrology indicators present				



Sampling Point: OP2-WA-WET

		<u>Absolute</u> <u>% Cover</u>	Dominant Species	Indicator Status	Dominance Test W	orkshee	t:		
Tree Stratum					Number of Dominar That Are OBL, FAC			1	(A
<u>Shrub Stratum</u>					Total Number of Dor	ninant			
Herb Stratum	(Plot size: <u>6 Ft</u>)				Species Across all S			1	(B)
Phragmites aust	ralis	70	Y	FACW	- Demonst of Deminord	Chaolor			-
Vine Stratum		70	_=Total Cover		Percent of Dominant That Are OBL, FAC			100.0%	_(A/
					Prevalence Index V	Vorkshe	et:		
					Total % Cover o	f:	Multi	oly by:	
					OBL species	0	x 1 =	0	
					FACW species	70	x 2 =	140	
					FAC species	0	x 3 =	0	
					FACU species	0	x 4 =	0	
					UPL species	0	x 5 =	0	
					Column Totals:	70	(A)	140	(E
					Prevalence Ind	dex = B//	4=	2.00	
					Hydrophytic Vegeta				
					1 - Rapid Test fo			petation	i
					X 2 - Dominance 1		-	J = =======	
					X 3 - Prevalence Index ≤ 3.0				
					Problematic Hyd	Irophytic	Vegetati	on (Exp	plai
					Indicators of hydric soil be present, unless dist				
					Definitions of Vegeta	tion Str	ata:		
					Tree – Woody plants, approximately 20 ft (6 (7.6 cm) or larger in di	m) or m	ore in hei	ght and	3 in DBH
					Sapling – Woody plan approximately 20 ft (6 than 3 in. (7.6 cm) DB	m) or m			
					Shrub – Woody plants approximately 3 to 20				
					Herb – All herbaceous herbaceous vines, reg plants, except woody 3 ft (1 m) in height.	ardless	of size. In	cludes v	woo
					Woody vine – All wood	dy vines,	regardle	ss of he	ight
					Hydrophytic Vegetation Presen				

Hydrophytic vegetation present based on dominance test and prevalence index

Profile Descri	ption: (Describe to the Matrix	e depth nee			icator or ⁻ 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
¹ Type: C=Cond	centration, D=Depletion		ced Martix, CS=Co	vered or	Coated S	Sand Grai	ns. ² Location: PL=Pore Lining	, M=Matrix.
5 cm Mucky Muck Presei 1 cm Muck (Depleted Be Thick Dark S Coast Prairie Sandy Muck Sandy Gleye Sandy Redo Stripped Ma) don (A2) (A3) ulfide (A4) yers (A5) dies (A6) (LRR P, T, U) Mineral (A7) (LRR P, T, U) nce (A8) (LRR U) (A9) (LRR P, T) elow Dark Surface (A11) Surface (A12) e Redox (A16) (MLRA 150A cy Mineral (S1) (LRR O, S) ed Matrix (S4) px (S5)	[[[Polyvalue Below S Thin Dark Surface Loamy Mucky Mind Loamy Gleyed Mai Depleted Matrix (F Redox Dark Surface Depleted Dark Surface Depleted Dark Surface Redox Depression Marl (F10) (LRR U Depleted Ochric (F Iron-Manganese M Umbric Surface (F Delta Ochric (F17) Reduced Vertic (F Piedmont Floodplate Anomalous Bright 	(S9) (LR eral (F1) (trix (F2) 3) ce (F6) face (F7) s (F8)) F11) (MLF fasses (F 13) (LRR (MLRA 1 18) (MLR 18) (MLR	R S, T, U) LRR O) 12) (LRR C P, T, U) 51) A 150A, 15 F19) (MLR,	9, P, T) 0B) A 149A)	Indicators for Problematic H 1 cm Muck (A9) (LRR 0) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outside Piedmont Floodplain Soils (F1 Anomalous Bright Loamy Soils (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (TI Other (Explain in Remarks) ³ Indicators of hydrophytic ve hydrology must be present, unless disturbed or problem	MLRA 150A,B) 9) (LRR P, S, T) s (F20) F12) (LRR T, U) getation and wetland
Restrictiv Type: Depth (inche Remarks: Hydric soil indica		d):					Hydric Soil Present?	/es <u>X</u> No

Project/Site: Orsted	City/County: Ocean	n County Sampling Date: 6/27/2019
Applicant/Owner: Ocean Wind - Farm Property		State: NJ Sampling Point: OP-WC-UP
Investigators: David Brizzolara 2	Zachary Lehmann Sectio	on, Township, Range S T Lacey R
Landform (hillslope, terrace, etc.): Terrace	-	e, convex, none): None Slope(%) 0-2%
Subregion (LRRor MLRA): LRR T		-74.175766 Datum: Decimal Degrees
Soil Map Unit Name: Berryland sand		NWI Classification: PFO1Bd
Are climatic / hydrologic conditions on the site typical	for this time of year? Yes X No	(If No, explain in Remarks)
	·	
Are Vegetation , Soil X, Hydrology , Are Vegetation , Soil , Hydrology ,	a structure in the second is Q	ormal Circumstances" present? Yes X No
	(eded, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach a site	e map snowing sampling point loo	cations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X		
Hydric Soil Present? Yes N	No X Is the Sampled Area within a Wetland?	Vec Ne Y
Wetland Hydrology Present? Yes	No X	Yes NoX
Remarks: Filled area next to bermed trail.		
HYDROLOGY		
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check	ck all that apply)	Secondary Indicators (minimum 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 Imagery (B7) Water-Stained Leaves (B9)	Aquatic Fauna (B13) Marl Deposits (B15) (LRR U) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roots (C3 Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Thin Muck Surface (C7) Other (Explain in Remarks)	 Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imag.(C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Sphagnum moss (D8) (LRR T,U)
Field Observations:		
Surface Water Present? Yes No Water Table Present? Yes No Saturation Present? Yes No (includes capillary fringe) Includes Recorded Data (stream gauge, monitoring well, aerial	X Depth (inches): X Depth (inches): X Depth (inches): al photos, previous inspections), if available:	Wetland Hydrology Present? Yes No_X
Remarks:		
No wetland hydrology indicators present		



Sampling Point: OP-WC-UP

		Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet:
Tree Stratum	(Plot size: 30 Ft)	<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>		0	Number of Dominant Species
Acer rubrum	(PIOUSIZE: <u>50 PL</u>)	25	Y	FAC	That Are OBL, FACW, or FAC: 3 (
Pinus strobus		3	N	FACU	Total Number of Dominant
		28	=Total Cover		Species Across all Strata: 3 (E
Shrub Stratum	(Plot size: 20 Et)				Percent of Dominant Species
Vaccinium corymb	(Plot size: <u>30 Ft</u>) osum	80	Y	FACW	That Are OBL, FACW, or FAC:
Acer rubrum		5	N	FAC	Prevalence Index Worksheet:
Sassafras albidum		5	N	FACU	Total % Cover of: Multiply by:
		90	=Total Cover		OBL species 0 x 1 = 0
Herb Stratum	(Plot size: <u>6 Ft</u>)		_		FACW species 80 x 2 = 160
Panicum amarum	(15	Y	FAC	
		15	=Total Cover		
/ine Stratum					
					UPL species x 5 =
					Column Totals: <u>133</u> (A) <u>327</u>
					Prevalence Index = B/A= 2.46
					Hydrophytic Vegetation Indicators:
					1 - Rapid Test for Hydrophytic Vegetation
					X 2 - Dominance Test > 50%
					X 3 - Prevalence Index ≤ 3.0
					Problematic Hydrophytic Vegetation (Expla
					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 (7.6 cm) or larger in diameter at breast height (DB
					Sapling – Woody plants, excluding woody vines,
					approximately 20 ft (6 m) or more in height and les 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, includi herbaceous vines, regardless of size. Includes wo plants, except woody vines, less than approximate 3 ft (1 m) in height.
					Woody vine – All woody vines, regardless of heigh
					Hydrophytic Vegetation Present? Yes X No



Remarks:	Profile Desc	ription: (Des		depth ne	eded to documen			confirm	the absence of Indicators.)	
0 to 2 10YR 3 / 2 100 SAND High root content 2 to 10 to 2/1 100 100 SAND SAND SAND 10 to 20 10YR 2/1 80 10YR 4/1 20 D M SAND SAn					<u> </u>					
2 to 10 10YR 2/1 10 10 10YR 2/1 80 10YR 4/1 20 D M SAND 10 to 20 10YR 2/1 80 10YR 4/1 20 D M SAND 11 10 to 20 10YR 2/1 80 10YR 4/1 20 D M SAND 11 10 to 20 10YR 2/1 80 10YR 4/1 20 D M SAND 11 10 to 20 10YR 2/1 80 10YR 4/1 20 D M SAND 11 11 11 10 10 M SAND Indicators 2 Location: PL=Pore Lining, M=Matrix. 11 Histosol (A1) 10 Thin Dark Surface (S9) (LRR S, T, U) 1 or Muck (A9) (LRR O) 2 cm Muck (A10) (LRR O) 2 cm Muck (A10) (LRR S) 1 or Muck (A9) (LRR P, T, U) Peledmont Floodplain Soils (F19) (MLRA 150A, E70) Much Piedmont Floodplain Soils (F19) (MLRA 153B) 1 oromalous Bright Loamy Soils (F20) (MLRA 153B)	(inches)	Color	(moist)	%	Color (moist)	%	Type 1	Loc ²	Texture	Remarks
10 to 20 10YR 2/1 80 10YR 4/1 20 D M SANDY LOAM "Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. *Location: PL=Pore Lining, M=Matrix. Histosol (A1) Polyvalue Below Surface (S8) (LRR S, T, U) Indicators for Problematic Hydric Soils: 3 Histosol (A1) Diak Kitsic (A3) Leamy Mucky Mineral (F1) (LRR O) 2 cm Muck (A9) (LRR S) Black Histic (A3) Leamy Mucky Mineral (F1) (LRR O) 2 cm Muck (A10) (LRR S) Hydrogen Sullide (A4) Leamy Gleyed Matrix (F2) Reduced Vertic (F18) (outside MLRA 150A,B) Organic Bodies (A6) (LRR P, T, U) Redox Depressions (F6) Redox Depressions (F8) 5 cm Muck (A6) (LRR P, T) Depleted Dark Surface (F7) Red Parent Material (TF2) Muck (A9) (LRR P, T) Redox Depressions (F8) Very Shallow Dark Surface (TF12) (LRR T, U) Depleted Below Dark Surface (A11) Depleted Dark Surface (F13) (LRR O, P, T) Stratace (F13) (LRR O, P, T) Sandy Mucky Mineral (S1) (LRO, S) Umbric Surface (F13) (LRR O, P, T) Stratace (F13) (LRR O, P, T) Sandy Gleyed Matrix (S4) Delta Ochric (F17) (MLRA 1501, 100000000000000000000000000000000	0 to 2	10YR	3/2	100					SAND	High root content
IType: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. 2 Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: Polyvalue Below Surface (S9) (LRR S, T, U) Indicators for Problematic Hydric Soils: ³ Histic Epipedon (A2) Damy Gleyed Matrix (F2) Reduced Vertic (F18) (outside MLRA 150A, B) Hydriogen Suffice (A4) Depleted Matrix (F2) Reduced Vertic (F18) (outside MLRA 150A, B) Organic Bodies (A6) (LRR P, T, U) Depleted Matrix (F3) Anomalous Bright Loamy Soils (F19) (LRR P, S, T) Mucky Mineral (A7) (LRR P, T, U) Depleted Matrix (F3) Redox Dark Surface (F7) Mucky Mineral (A7) (LRR P, T, U) Depleted Oark Surface (F7) Redox Dark Surface (F7) Muck A (A9) (LRR P, T) Marl (F10) (LRR U) Other (Explain in Remarks) Depleted Below Dark Surface (A12) Iron-Manganese Masses (F12) (LRR O, P, T) 3 Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) (LRR P, S, T, U) Delta Ochric (F13) (MLRA 150A, 150B) 3 Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Redox (S5) Reduced Vertic (F18) (MLRA 150A, 150B) 3 Indicators of hydrophytic vegetation and wetland hydrology fuely cegetation and wetland hydrology fuely cegetation and wetland hydrology fuely cegetation and wetland hydrolo	2 to 10	10YR	2/1	100					SAND	
Hydric Soil Indicators: Polyvalue Below Surface (S8) (LRR S, T, U) Indicators for Problematic Hvdric Soils: ³ Histosol (A1) Thin Dark Surface (S8) (LRR S, T, U) 1 cm Muck (A9) (LRR O) Black Histic (A2) Loamy Mucky Mineral (F1) (LRR O) 2 cm Muck (A9) (LRR S) Black Histic (A3) Loamy Gleyed Matrix (F2) Reduced Vertic (F18) (outside MLRA 150A,B) Organic Bodies (A6) (LRR P, T, U) Depleted Matrix (F3) Piedmont Floodplain Soils (F19) (LRR P, S, T) Muck Presence (A8) (LRR P, T, U) Depleted Dark Surface (F6) (MLRA 153B) Muck Presence (A8) (LRR P, T) Redox Depressions (F8) Very Shallow Dark Surface (T12) (LRR T, U) Depleted Below Dark Surface (A11) Depleted Ochric (F11) (MLRA 151) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) (LRR O, S) Belad Ochric (F13) (MLRA 150A, 150B) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S6) Piedmont Floodplain Soils (F19) (MLRA 149A, 150C, 153D) Matrix (S6) Piedmont Floodplain Soils (F19) (MLRA 149A, 153C, 153D) Remarks: Hydric Soil Present? Yes No	10 to 20	10YR	2/1	80	10YR 4/1	20	D	Μ	SANDY LOAM	
Histosol (A1) Polyvalue Below Surface (S8) (LRR S, T, U) Interaction to Truthe Statuse Histosol (A2) Dawy Mucky Mineral (S1) (LRR O) 2 cm Muck (A9) (LRR O) Black Histic (A3) Loamy Mucky Mineral (F1) (LRR O) 2 cm Muck (A9) (LRR S) Hydrogen Suffide (A4) Depleted Matrix (F2) Reduced Vertic (F18) (outside MLRA 150A, B) Organic Bodies (A6) (LRR P, T, U) Redox Dark Surface (F6) Anomalous Bright Loamy Solis (F20) (MLRA 153B) S or 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) (LRR T, U) 1 train Muck (A9) (LRR P, T) Marl (F10) (LRR U) Other (Explain in Remarks) Beater Histic Redox (A11) Depleted Ochric (F11) (MLRA 151) 3 Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. S andy Mucky Mineral (S1) (LRR O, S) Umbric Surface (F17) (MLRA 150A) 3 Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. S andy Mucky Mineral (S1) (LRR O, S) Delta Ochric (F17) (MLRA 150A, 150B) 3 Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. S andy Mucky Mineral (S1) (LRR O, S) Delta Ochric (F17) (MLRA 150A, 150B)	¹ Type: C=Co	ncentration, D	=Depletion,	RM=Red	uced Martix, CS=C	overed o	r Coated S	Sand Gra	ains. ² Location: PL=Pore L	ining, M=Matrix.
Type:	Histosol (A Histic Epip Black Histi Hydrogen Stratified L Organic Be 5 cm Muck Depleted B Thick Dark Coast Prai Sandy Muc Sandy Gle Sandy Rec	A1) bedon (A2) ic (A3) Sulfide (A4) Layers (A5) bodies (A6) (LRF sy Mineral (A7) (sence (A8) (LRF (A9) (LRR P, 1 Below Dark Surf (A9) (LRR P, 1 (A16) (A9) (A9) (LRR P, 1 (A16) (A9) (A17) (A9) (A16) (A17) (A16) (A17) (A16) (A17) (A16) (A17) (A17) (A17) (A17) (A17) (A17) (A17) (A17) (A17) (A17) (A17) (A	(LRR P, T, U) R U) (7) ace (A11) (MLRA 150A ((LRR O, S)		 Thin Dark Surfac Loamy Mucky Mii Loamy Gleyed M Depleted Matrix (Redox Dark Surfac Depleted Dark Surfac Redox Depression Marl (F10) (LRR Depleted Ochric (Iron-Manganese Umbric Surface (Delta Ochric (F17) Reduced Vertic () Piedmont Floodp 	e (S9) (LR neral (F1) atrix (F2) (F3) ace (F6) urface (F7) ons (F8) U) (F11) (MLR (F13) (LRR 7) (MLRA 1 F18) (MLR	R S, T, U) (LRR O) (LRR O) 12) (LRR C P, T, U) 151) A 150A, 15 (F19) (MLR,	0, P, T) 0B) A 149A)	 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (ou Piedmont Floodplain Soil Anomalous Bright Loamy (MLRA 153B) Red Parent Material (TF2 Very Shallow Dark Surfact Other (Explain in Remarks ³ Indicators of hydrophy hydrology must be pre- unless disturbed or pro- 	s) utside MLRA 150A,B) Is (F19) (LRR P, S, T) / Soils (F20) 2) ce (TF12) (LRR T, U) ks) tic vegetation and wetland esent,
No hydric soil indicators present	Type: Depth (incl Remarks:	hes):		d):					Hydric Soil Present?	Yes <u>No X</u>

Project/Site: Orsted	City/County:	Ocean County Sampling Date: 6/27/2019
Applicant/Owner: Ocean Wind - Farm Property		State: NJ Sampling Point: OP-WC-WET
Investigators: David Brizzolara Zach	ary Lehmann	Section, Township, Range S T Lacey R
Landform (hillslope, terrace, etc.): Toe of Slope	Local Relief (co	oncave, convex, none): Concave Slope(%) 0-2%
Subregion (LRRor MLRA): LRR T Lat	: 39.814365	Long: -74.175752 Datum: Decimal Degrees
Soil Map Unit Name: Berryland sand		NWI Classification: PFO1Bd
Are climatic / hydrologic conditions on the site typical for t	his time of year? Yes X	No (If No, explain in Remarks)
Are Vegetation, Soil, Hydrology, sig	·	Are "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, Hydrology, sig		·
		(If needed, explain any answers in Remarks.)
	<u> </u>	_
	Is the Sampled Area	
Watland Lludralagy Dragant?	within a Wetland?	Yes X No
Wetland Hydrology Present? Yes X No		
Hydrophytic vegetation, hydric soil, and wetland hydrolog		
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check al	ll that apply)	Surface Soil Cracks (B6)
Surface Water (A1)	Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
	Marl Deposits (B15) (LRR U)	Drainage Patterns (B10)
	Hydrogen Sulfide Odor (C1)	Moss Trim Lines (B16)
	Oxidized Rhizospheres along Living Ro	
	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
	Recent Iron Reduction in Tilled Soils (C	6) Saturation Visible on Aerial Imag.(C9) Geomorphic Position (D2)
	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	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): 6	-
Saturation Present? Yes X No	Depth (inches): 0	Wetland Hydrology Present? Yes X No
(includes capillary fringe)		—
Describe Recorded Data (stream gauge, monitoring well, aerial pho	otos, previous inspections), if available:	
Remarks:		
Wetland hydrology indicators present		



Sampling Point: OP-WC-WET

		<u>Absolute</u> % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet:
Tree Stratum	(Plot size: 30 Ft)				Number of Dominant Species
Acer rubrum	(11003120. <u>3010</u>)	35	Y	FAC	That Are OBL, FACW, or FAC:3(
		35	=Total Cover		Total Number of Dominant
Shrub Stratum	(Plot size: 30 Ft)				Species Across all Strata: 3 (E
Vaccinium corym	· · · · · · · · · · · · · · · · · · ·	30	Y	FACW	Percent of Dominant Species 100.0% (A
Sassafras albidu	n	5	N	FACU	That Are OBL, FACW, or FAC:
		35	=Total Cover		Prevalence Index Worksheet:
Herb Stratum	(Plot size: 6 Ft)				Total % Cover of: Multiply by:
Phragmites austr	· · · · · · · · · · · · · · · · · · ·	95	Y	FACW	OBL species 0 x 1 = 0
Osmundastrum c	innamomeum	5	Ν	FACW	FACW species 130 x 2 =260
		100	=Total Cover		FAC species35 x 3 =105
/ine Stratum					FACU species 5 x 4 = 20
					UPL species $0 \times 5 = 0$
					Column Totals: <u>170</u> (A) <u>385</u> (A)
					Prevalence Index = B/A= 2.26
					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 ir (7.6 cm) or larger in diameter at breast height (DBF
					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, includir herbaceous vines, regardless of size. Includes woo plants, except woody vines, less than approximate 3 ft (1 m) in height.
					Woody vine – All woody vines, regardless of heigh
					Hydrophytic Vegetation Present? Yes X No

Hydrophytic vegetation present based on dominance test and prevalence index



	iption: (Des	cribe to the Matrix	depth ne	eded to document		Features	confirm	the absence of Indicators.)	
Depth (inches)	Color	(moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 4	10YR	2/1	100	. <u></u>		CS		SANDY LOAM	organic layer - mucky texture
4 to 20	10YR	2/1	100					SAND	_
¹ Type: C=Con	centration, D)=Depletion,	RM=Redu	uced Martix, CS=Co	overed o	r Coated S	Sand Gra	ains. ² Location: PL=Pore Lining	g, M=Matrix.
 5 cm Muck? Muck Prese 1 cm Muck Depleted B Thick Dark Coast Prair Sandy Muc Sandy Gley Sandy Red Stripped Ma 	1) 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) ie Redox (A16 ky Mineral (S1 red Matrix (S4) ox (S5)	(LRR P, T, U) ? U) fiace (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 Piedmont Floodpla Anomalous Bright 	(S9) (LR eral (F1) trix (F2) (Ce (F6) rface (F7) (F3) (F1) (MLR (Masses (F (F13) (LRR) (MLRA (MLRA (MLRA (MLR (MLR (MLR)) (MLR	(LRR O) (LRR O) (IRR T51) (LRR C) (12) (LRR C (12) (LRR C (12) (LRR C (13) (LRR C (13) (LRR C (13) (LRR C (13) (LRR C) (14) (15) (LRR C) (14) (15) (15) (15) (15) (15) (15) (15) (15	0, P, T) 0B) A 149A)	Indicators for Problematic H 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outside Piedmont Floodplain Soils (F1 Anomalous Bright Loamy Soils (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (TI Other (Explain in Remarks) ³ Indicators of hydrophytic ve hydrology must be present, unless disturbed or problem ØA, 153C, 153D)	MLRA 150A,B) 9) (LRR P, S, T) s (F20) F12) (LRR T, U) getation and wetland
Restrict Type: Depth (inch	ive Layer (if observe	d):					Hydric Soil Present?	Yes X No
Remarks: Hydric soils pre	esent								

Project/Site: Orsted		City/County: Oc	ean County S	Sampling Date: 6/27/2019
Applicant/Owner: Ocean Wind - Farm	1 Property		State: NJ S	Sampling Point: OP-WDE-UP
Investigators: David Brizzolara	Zachary Lehr	mann Sec	ction, Township, Range	· · · · · · · · · · · · · · · · · · ·
Landform (hillslope, terrace, etc.):	Terrace	Local Relief (conc	ave, convex, none): No	ne Slope(%) 0-2%
Subregion (LRRor MLRA): LRR T	Lat: 39.81		ng: -74.170307	Datum: Decimal Degrees
• · · · · ·	Transquaking-Mispillion		NWI Classificat	
Are climatic / hydrologic conditions on the		· · ·		ain in Remarks)
Are Vegetation, Soil, Hydro			"Normal Circumstances"	
Are Vegetation, Soil, Hydro			needed, explain any ans	·
SUMMARY OF FINDINGS - Atta		(,
		wing sampling point i		
	es X No	Is the Sampled Area		
	es <u>No X</u>	within a Wetland?	Yes	No X
Wetland Hydrology Present? Y	es <u>No X</u>			
Remarks:	I			
Upland Island				
HYDROLOGY				
Wetland Hydrology Indicators:			Secondary Inc	dicators (minimum of two required)
Primary Indicators (minimum of one is re	quired; check all that ap	ply)	Surface S	Soil Cracks (B6)
Surface Water (A1)		auna (B13)		Vegetated Concave Surface (B8)
High Water Table (A2)		osits (B15) (LRR U)	Drainage	Patterns (B10)
Saturation (A3)		Sulfide Odor (C1)	Moss Trin	n Lines (B16)
Water Marks (B1)		Rhizospheres along Living Roots	(C3) Dry-Sease	on Water Table (C2)
Sediment Deposits (B2)		of Reduced Iron (C4)		Burrows (C8)
Drift Deposits (B3)	Recent In	on Reduction in Tilled Soils (C6)	Saturation	n Visible on Aerial Imag.(C9)
Algal Mat or Crust (B4)	🗌 Thin Muc	k Surface (C7)		hic Position (D2)
Iron Deposits (B5)	Other (Ex	plain in Remarks)		Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)			_	tral Test (D5)
Water-Stained Leaves (B9)			Sphagnur	m moss (D8) (LRR T,U)
Field Observations:				
Surface Water Present? Yes	No X Dept	th (inches):		
Water Table Present? Yes	No X Dept	th (inches):		
Saturation Present? Yes _	No X Dept	th (inches):	Wetland Hydrolog	y Present? Yes No_X
(includes capillary fringe) Describe Recorded Data (stream gauge, monito	ring well, periol photon, prov	ique inepections), if evailable:		
Describe necolded Data (stream gauge, monito	ning weil, aenai priotos, prev	ious inspections), il available.		
Remarks:				
No wetland hydrology indicators present				



Sampling Point: OP-WDE-UP

	<u>Absolute</u> <u>% Cover</u>	Dominant Species	Indicator Status	Dominance Test Worksheet:
Tree Stratum				Number of Dominant Species That Are OBL, FACW, or FAC: 2
Shrub Stratum (Plot size: 30 Ft)				
Baccharis halimifolia	5	Y	FAC	Total Number of Dominant Species Across all Strata: 3 (I
	5	=Total Cover		
Herb Stratum (Plot size: <u>6 Ft</u>)				Percent of Dominant Species 66.7% (Arrow 1997) (Arrow 197
Lolium perenne	65	Y	FACU	Prevalence Index Worksheet:
Desmodium canadense	25	Y	FAC	
Euthamia graminifolia		N	FAC	
Verbena hastata	5	N	FAC	
	105	=Total Cover		FACW species X 2 = 0
/ine Stratum				FAC species 45 x 3 = 135
				FACU species 65 x 4 =260
				UPL species 0 x 5 = 0
				Column Totals:(A)395
				Prevalence Index = B/A= 3.59
				Hydrophytic Vegetation Indicators:
				1 - Rapid Test for Hydrophytic Vegetation
				X 2 - Dominance Test > 50%
				3 - Prevalence Index ≤ 3.0
				Problematic Hydrophytic Vegetation (Expla
				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 (7.6 cm) or larger in diameter at breast height (DB
				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and lead 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, includ herbaceous vines, regardless of size. Includes we plants, except woody vines, less than approximate 3 ft (1 m) in height.
				Woody vine – All woody vines, regardless of heigh
				Hydrophytic Vegetation Present? Yes X No

Hydrophytic vegetation present based on dominance test > 50%



Profile Description: (Describe to the	depth nee	ded to documen		Features	confirm	the absence of indicators.)	
Depth <u>Matrix</u> (inches) Color (moist)	%	Color (moist)	Redux %	Type ¹	Loc ²	Texture	Remarks
			/0	Турс		SAND	
0 to 8 10YR 2/1 8 to 14 10YR 4/2	<u>100</u> 80	10yr 3/4	20	С	М	SAND SANDY LOAM	
14 to 20 10YR 8/3	60	10yr 5/8	40	<u> </u>	M	SAND	
¹ Type: C=Concentration, D=Depletion,	RM=Reduc	ced Martix, CS=Co	overed o	r Coated S	Sand Gra	ains. ² Location: PL=Pore Lini	ng, 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 Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U)		 Polyvalue Below S Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Ma Depleted Matrix (I Redox Dark Surface Depleted Dark Su Redox Depression Marl (F10) (LRR I) Depleted Ochric (Iron-Manganese I) Umbric Surface (F17) Reduced Vertic (F17) Ret	e (S9) (LR heral (F1) atrix (F2) F3) ace (F6) urface (F7) ns (F8) J) (F11) (MLR F13) (LRR r) (MLRA - E18) (MLR E18) (MLR	(LRR O) (LRR O) (12) (LRR C (12) (LRR C (12) (LRR C (15) (15) (15) (15) (15) (15) (11) (MLR, (15) (11) (MLR,	, P, T) 0B) A 149A)	Indicators for Problematic 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outsic Piedmont Floodplain Soils (F Anomalous Bright Loamy Sc (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (Other (Explain in Remarks) ³ Indicators of hydrophytic v hydrology must be preser unless disturbed or proble	te MLRA 150A,B) F19) (LRR P, S, T) iils (F20) TF12) (LRR T, U) /egetation and wetland it,
Restrictive Layer (if observed Type: Depth (inches): Remarks: No hydric soils present	3): 					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-WD-WET				
Investigators: David Brizzolara	Zachary Lehmann	Section, Township, Range S T Lacey R				
Landform (hillslope, terrace, etc.): Depress	Sion Local Relief (concave, convex, none): Concave Slope(%) 0-2%				
Subregion (LRRor MLRA): LRR T	Lat: 39.812020	Long: -74.170243 Datum: Decimal Degrees				
Soil Map Unit Name: Appoquinimink-Transqual	king-Mispillion complex	NWI Classification: E2EM5P				
Are climatic / hydrologic conditions on the site typic	al 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		(If needed, explain any answers in Remarks.)				
SUMMARY OF FINDINGS - Attach a si	te map showing sampling po	int locations, transects, important features, etc.				
Hydrophytic Vegetation Present? Yes X	No					
Hydric Soil Present? Yes X	No Is the Sampled Are within a Wetland?					
Wetland Hydrology Present? Yes X		Yes <u>X</u> No				
Hydrophytic vegetaion, hydric soil, and wetland hy	drology all present					
HYDROLOGY						
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; ch	neck all that apply)	Secondary Indicators (minimum of two required)				
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 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) 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 Saturation Present? Yes X No	X Depth (inches):	Wetland Hydrology Present? Yes X No				
Saturation Present? Yes X No (includes capillary fringe)	Depth (inches):10_					
Describe Recorded Data (stream gauge, monitoring well, as	vial photos, previous inspections), if available	e:				
Remarks:						
Wetland hydrology present						



Sampling Point: OP-WD-WET

	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Workshee	t:		
Tree Stratum	<u>,,,,,,,,</u>	<u></u>		Number of Dominant Specie That Are OBL, FACW, or F		3	(A
Shrub Stratum (Plot size: 30 Ft)				That Ale ODE, I AOW, OF I		-	_ `
Vaccinium corymbosum	25	Y	FACW	Total Number of Dominant Species Across all Strata:		3	(B
	25	=Total Cover					_`
Herb Stratum (Plot size: <u>6 Ft</u>)	100		54.014/	Percent of Dominant Species That Are OBL, FACW, or FA		100.0%	(A
Phragmites australis Onoclea sensibilis	100 50	- <u>Y</u> Y	FACW FACW	Prevalence Index Workshe	et:		-
	150			Total % Cover of:	Mult	iply by:	
Vine Stratum		_=Total Cover		OBL species 0	x 1 =	0	
vine offation -				FACW species 175	x 2 =	350	
				FAC species 0	x 3 =	0	
				FACU species 0	x 4 =	0	
					x 5 =		
					(A)	350	(1
				Prevalence Index = B/		2.00	
				Hydrophytic Vegetation Ind	icators:		
				1 - Rapid Test for Hydro	phytic Ve	egetation	
				X 2 - Dominance Test > 50)%		
				X 3 - Prevalence Index ≤ 3	.0		
				Problematic Hydrophytic	Vegetat	ion (Exp	plai
				Indicators of hydric soil and weth be present, unless disturbed or p			
				Definitions of Vegetation Str	ata:		
				Tree – Woody plants, excludin approximately 20 ft (6 m) or m (7.6 cm) or larger in diameter a	ore in he	ight and	
				Sapling – Woody plants, exclu approximately 20 ft (6 m) or m than 3 in. (7.6 cm) DBH.			
				Shrub – Woody plants, exclud approximately 3 to 20 ft (1 to 6	ing wood m) in he	ly vines, eight.	
				Herb – All herbaceous (non-wu herbaceous vines, regardless plants, except woody vines, les 3 ft (1 m) in height.	of size. I	ncludes v	woo
				Woody vine – All woody vines,	regardle	ess of he	igh
				Hydrophytic Vegetation Present? Ye	s X	No	

Hydrophytic vegetation present based on dominance test and prevalence index



Depth	Puon. (Des	Matrix	s achai ne			eatures		the absence of Indicators.)	
(inches)	Color	(moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 4	10YR	2/1	100					SAND	roots
4 to 20	10YR	2/1	100					SAND	
¹ Type: C=Cond	centration, D)=Depletion	, RM=Redu	iced Martix, CS=Co	overed or	Coated S	Sand Gra	ins. ² Location: PL=Pore	Lining, M=Matrix.
 5 cm Mucky Muck Presei 1 cm Muck (Depleted Be Thick Dark S Coast Prairie Sandy Muck) (A3) ulfide (A4) yers (A5) dies (A6) (LRF Mineral (A7) nce (A8) (LRF (A9) (LRR P, ⁻ elow Dark Surf Surface (A12) e Redox (A16 sy Mineral (S1	(LRR P, T, U) R U) face (A11)) (MLRA 150/) (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 (F Iron-Manganese M Umbric Surface (F Delta Ochric (F17) 	e (S9) (LRI eral (F1) (trix (F2) F3) cc (F6) rface (F7) ns (F8) J) F11) (MLF Masses (F F13) (LRR	R S, T, U) LRR O) A 151) (LRR C P, T, U)		Indicators for Problema 1 cm Muck (A9) (LRR O 2 cm Muck (A10) (LRR O Reduced Vertic (F18) (o Piedmont Floodplain So Anomalous Bright Loam (MLRA 153B) Red Parent Material (TF Very Shallow Dark Surfa Other (Explain in Remar ³ Indicators of hydroph hydrology must be pr unless disturbed or p) S) utside MLRA 150A,B) ils (F19) (LRR P, S, T) y Soils (F20) 2) ace (TF12) (LRR T, U) ks) ytic vegetation and wetland esent,
Sandy Redo Stripped Ma Dark Surface		P, S, T, U)	[[[Reduced Vertic (F Piedmont Floodpla Anomalous Bright	18) (MLR. ain Soils (I	A 150A, 15 F19) (MLR/	A 149A)		
Depth (inche Remarks:	es):							Hydric Soil Present?	Yes X No
Hydric soils pres	sent								

Project/Site: Orsted		City/Co	unty: Ocean	County S	ampling Date:	6/26/2019
Applicant/Owner: Ocean	Wind - Farm Property			State: NJ Sa	ampling Point:	OP-WE-UP
Investigators: David Brizz	olara	Zachary Lehmann	Sectior	n, Township, Range	S T Lace	ey R
Landform (hillslope, terrace, e			Local Relief (concave			Slope(%) 0-2%
Subregion (LRRor MLRA): L		Lat: 39.812156		-74.186940		1: Decimal Degrees
						1. 200a. 209.000
· · · · · · · · · · · · · · · · · · ·	yland sand			NWI Classificati		
Are climatic / hydrologic condi		-	Yes X No		in in Remarks)	
Are Vegetation, Soil _				rmal Circumstances"	present? Yes	s X No
Are Vegetation, Soil	, Hydrology	_, naturally problemati	c? (If nee	eded, explain any answ	vers in Remarks	s.)
SUMMARY OF FINDIN	IGS - Attach a site	e map showing s	ampling point loc	ations, transects	<u>, important</u>	features, etc.
Hydrophytic Vegetation Pres	sent? Yes	No X				
Hydric Soil Present?	Yes		e Sampled Area n a Wetland?			
Wetland Hydrology Present?	·	No X		Yes	NoX	
Remarks: No hydrophytic vegetation, h	yric soil, or wetland hyc	drology present				
HYDROLOGY						
Wetland Hydrology Indicate Primary Indicators (minimum		eck all that apply)			cators (minimur bil Cracks (B6)	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 In Water-Stained Leaves (B9)	nagery (B7)	Presence of Reduce	(LRR U) dor (C1) res along Living Roots (C3) d Iron (C4) on in Tilled Soils (C6) (C7)	Drainage F Moss Trim Dry-Seaso Crayfish B Saturation Geomorph Shallow Ac FAC-Neutr	Yegetated Concave Patterns (B10) Lines (B16) In Water Table (C2 urrows (C8) Visible on Aerial In ic Position (D2) quitard (D3) ral Test (D5) In moss (D8) (LRR	2) Imag.(C9)
Surface Water Present?	Yes No	X Depth (inches)				
Water Table Present?	Yes No	X Depth (inches)		Wetler - H.	- Dwa	Vee N V
Saturation Present? (includes capillary fringe)	Yes No	X Depth (inches)		Wetland Hydrology	Present?	Yes No_X
Describe Recorded Data (stream g Remarks: No wetland hydrology indicators pr		ial photos, previous inspe	ctions), if available:			



Sampling Point: OP-WE-UP

	Absolute <u>% Cover</u>	Dominant Species	Indicator Status	Dominance Test Worksheet:	
Tree Stratum (Plot size: 30 Ft)				Number of Dominant Species	(A)
Juniperus virginiana	40	Y	FACU	That Are OBL, FACW, or FAC: 2	_ (/ ()
Nyssa sylvatica	20	Y	FAC	Total Number of Dominant	
Sassafras albidum	5	N	FACU	Species Across all Strata: 4	(B)
	65	=Total Cover		Percent of Dominant Species 50.0%	(A/B)
<u>Shrub Stratum</u> (Plot size: <u>30 Ft</u>)			54014		
Vaccinium corymbosum	25	_ <u>Y</u>	FACW	Prevalence Index Worksheet:	
Quercus stellata	20	Y	UPL	Total % Cover of: Multiply by:	
llex sp.	2	N		OBL species x 1 =0	
	47	=Total Cover		FACW species25 x 2 =50	
Herb Stratum (Plot size: <u>6 Ft</u>)				FAC species21 x 3 =63	
Fescue sp.	1	Ν		FACU species 45 x 4 =180	
	1	=Total Cover		, 00	
Vine Stratum (Plot size: <u>30 Ft</u>)					
Smilax rotundifolia	1	N	FAC	Column Totals:(A)393	<u>(</u> B)
	1	=Total Cover		Prevalence Index = B/A= 3.54	
				Hydrophytic Vegetation Indicators:	
				1 - Rapid Test for Hydrophytic Vegetation	
				2 - Dominance Test > 50%	
				3 - Prevalence Index ≤ 3.0	
				Problematic Hydrophytic Vegetation (Exp	olain)
				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 (7.6 cm) or larger in diameter at breast height (D	
				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and I 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, inclu herbaceous vines, regardless of size. Includes w plants, except woody vines, less than approxima 3 ft (1 m) in height.	voody
				Woody vine – All woody vines, regardless of heig	ght.
Remarks: (Include photo numbers here or on a separate sheet.))			Hydrophytic Vegetation Present? YesNo)	<u>x</u>

Hydrophytic vegetation not present due to dominance test of 0% and prevalance index



	ription: (Des		depth no	eeded to document			confirm	the absence of Indicators.)	
Depth (inches)	Color	Matrix (moist)	%	Color (moist)	Redox I %	Features Type 1	Loc ²	Texture	Remarks
	-		· ·		/0	Type -	LUC -		·
0 to 2	10YR	2/2	100					SAND SAND	Organics
2 to 16	10YR	5/3	100						
16 to 20	10YR	3/1	100					SAND	
¹ Type: C=Co	ncentration, D	D=Depletion,	RM=Red	luced Martix, CS=Cc	overed o	r Coated S	Sand Gra	ains. ² Location: PL=Pore Li	ning, M=Matrix.
Stratified L Organic B 5 cm Muck Muck Pres 1 cm Muck Depleted B Thick Dark Coast Prai Sandy Mu Sandy Gle Stripped M	A1) pedon (A2) ic (A3) Sulfide (A4) Layers (A5) odies (A6) (LRF (A6) (LRF (A7) Sence (A8) (LRF (A9) (LRR P, 1 Below Dark Surf (A9) (LRR P, 1 Below Dark Surf (Surface (A12) irie Redox (A16) cky Mineral (S1) pyed Matrix (S4) dox (S5)	(LRR P, T, U) { U) (I) (ace (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 Surfa Depleted Dark Surfa Depleted Ochric (I Iron-Manganese M Umbric Surface (F Delta Ochric (F17) Reduced Vertic (F Piedmont Floodpla Anomalous Bright 	e (S9) (LR eral (F1) (trix (F2) 53) cc (F6) rface (F7) ns (F8) J) F11) (MLF Masses (F 513) (LRR 1 (MLRA 1 518) (MLR 1 518) (MLR	R S, T, U) (LRR O) (12) (LRR O P, T, U) (151) A 150A, 15 (F19) (MLR)	, P, T) 0B) A 149A)	Indicators for Problemation 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (out Piedmont Floodplain Soils Anomalous Bright Loamy S (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface Other (Explain in Remarks ³ Indicators of hydrophyti hydrology must be presunless disturbed or prob	side MLRA 150A,B) ; (F19) (LRR P, S, T) Soils (F20) e (TF12) (LRR T, U) s) c vegetation and wetland sent,
Restric Type:	tive Layer (i	if observe	d):						
Depth (inc	hes):							Hydric Soil Present?	Yes No X
Remarks:	·								
No hydric soils	s present								

Project/Site: Orsted	City/County: C	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 Se	ection, Township, Range S T Lacey R
Landform (hillslope, terrace, etc.): Depressi	ion Local Relief (con	ncave, convex, none): None Slope(%) 0-2%
Subregion (LRRor MLRA): LRR T	Lat: 39.811366 Lo	ong: -74.185059 Datum: Decimal Degrees
Soil Map Unit Name: Atsion sand		NWI Classification: E2EM5P
Are climatic / hydrologic conditions on the site typica	al for this time of year? Yes X	No (If No, explain in Remarks)
Are Vegetation, Soil, Hydrology	· · · · · · · · · · · · · · · · · · ·	e "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, Hydrology	n at walls and blans at a 0	· · · · · · · · · · · · · · · · · · ·
	(If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach a sit	e map snowing sampling point	t locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X	No la the Osmanla d Area	
Hydric Soil Present? Yes X	No Is the Sampled Area within a Wetland?	Yee Y Ne
Wetland Hydrology Present? Yes X	No	Yes <u>X</u> No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; chained) ✓ Surface Water (A1) ✓ High Water Table (A2) ✓ Saturation (A3) ✓ Water Marks (B1)	eck all that apply) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ✔ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres along Living Root	Secondary Indicators (minimum of two required) Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16) S (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 Imag.(C9)
Algal Mat or Crust (B4) Iron Deposits (B5)	Thin Muck Surface (C7)	Geomorphic Position (D2) Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	FAC-Neutral Test (D5)
Water-Stained Leaves (B9)		Sphagnum moss (D8) (LRR T,U)
Field Observations:		
Surface Water Present? Yes X No	Depth (inches): 2	
Water Table Present? Yes X No	Depth (inches): 0	
Saturation Present? Yes X No	Depth (inches): 0	Wetland Hydrology Present? Yes X No
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, ae Standing water in old ditch 0.5-6" deep, no discerable flow.	rial photos, previous inspections), if available:	
Remarks:		



Sampling Point: OP-WE-WET

		Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet:	
Tree Stratum	(Plot size: 30 Ft)	<u>,</u>	<u></u>	<u></u>	Number of Dominant Species	(4
Acer rubrum	(50	Y	FAC	That Are OBL, FACW, or FAC: 2	(/
		50	=Total Cover		Total Number of Dominant	(5
Shrub Stratum					Species Across all Strata: 2	(E
<u>Herb Stratum</u> Phragmites aust	(Plot size: <u>6 Ft</u>) ralis	50	Y	FACW	Percent of Dominant Species 100.0)%_ (A
Lemna sp.		10	N	OBL	Prevalence Index Worksheet:	
		60	=Total Cover		Total % Cover of: Multiply b	y:
Vine Stratum					OBL species 10 x 1 =1	0
					FACW species 50 x 2 =10	00
					FAC species 50 x 3 =1	50
					FACU species x 4 =0)
					UPL species0 x 5 =0)
					Column Totals:110(A)26	0 (I
					Prevalence Index = B/A= 2.36	6
					Hydrophytic Vegetation Indicators:	
					1 - Rapid Test for Hydrophytic Vegetat	ion
					X 2 - Dominance Test > 50%	
					X 3 - Prevalence Index ≤ 3.0	
					Problematic Hydrophytic Vegetation (Explai
					Indicators of hydric soil and wetland hydrology m be present, unless disturbed or problematic.	ust
					Definitions of Vegetation Strata:	
					Tree – Woody plants, excluding woody vines approximately 20 ft (6 m) or more in height a (7.6 cm) or larger in diameter at breast heigh	nd 3 in
					Sapling – Woody plants, excluding woody vii approximately 20 ft (6 m) or more in height a than 3 in. (7.6 cm) DBH.	
					Shrub – Woody plants, excluding woody vine approximately 3 to 20 ft (1 to 6 m) in height.	es,
					Herb – All herbaceous (non-woody) plants, in herbaceous vines, regardless of size. Includ- plants, except woody vines, less than approx 3 ft (1 m) in height.	es woo
					Woody vine – All woody vines, regardless of	height
					Hydrophytic Vegetation Present? Yes X No	

Hydrophytic vegetation present based on dominance test and prevalence test



	iption: (Des	cribe to the Matrix	depth nee	eded to document		icator or ⁻ eatures	confirm	the absence of Ir	ndicators.)		
Depth (inches)	Color	(moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	2	Rem	arks
0 to 6	10YR	5/4	100			.)po		SAND	·	peat, plant	
6 to 10	10YR	4/1	100					SAND		pear, plain	
10 to 20	10YR	3/1	100			<u> </u>		SAND			
				ced Martix, CS=Co	overed or	Coated S	and Gra		on: PL=Pore Lining, I	N=Matrix.	
Hydric Soil I	ndicators:		Г	¬				Indicators fo	or Problematic Hyd	ric Soils	. 3
5 cm Mucky Muck Prese 1 cm Muck Depleted Ba Thick Dark Coast Prairi Sandy Much Sandy Gley Sandy Redo Stripped Mat	ddon (A2) (A3) (A3) (auffide (A4) (ayers (A5) (dies (A6) (LRF (Mineral (A7) ((ance (A8) (LRF (A9) (LRR P, 1 (A9) (LRR P, 1) (A9) (LR (A9) (LR P, 1) (A9) (LR P, 1) (A9) (A9) (A9) (A9) (A9) (A9) (A9) (A9	LRR P, T, U) U) ace (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 Surface Redox Depression Marl (F10) (LRR U Depleted Ochric (F Iron-Manganese M Umbric Surface (F Delta Ochric (F17) Reduced Vertic (F Piedmont Floodpla Anomalous Bright 	(S9) (LR eral (F1) (trix (F2) 3) cc (F6) rface (F7) as (F8) 1) =11) (MLF fasses (F 13) (LRR 13) (LRR 18) (MLR 1 18) (MLR	R S, T, U) LRR O) 12) (LRR O P, T, U) 51) A 150A, 15 F19) (MLRA	, P, T))B) \ 149A)	 1 cm Muc 2 cm Muc Reduced Piedmont Anomalou (MLRA 15 Red Pare Very Sha Other (Ex ³ Indicat hydrolou unless 	ck (A9) (LRR O) ck (A10) (LRR S) Vertic (F18) (outside M t Floodplain Soils (F19) us Bright Loamy Soils (F	LRA 150A, (LRR P, S, 720) 2) (LRR T, tation and v	- Т) U)
Type: <u>silt</u> Depth (inch Remarks:	es): <u>10-</u>	20						Hydric Soil Pr			No
									lacially rounded quartz;		

Project/Site: Orsted		City/County:	Ocean County		Sampling Dat	e: 5/5/2020
Applicant/Owner: Ocean Wind	- Holtec Property		State:	NJ	Sampling Poir	nt: WL-A-UPL
Investigators: Stephen Seymou	ur Jaclyn Cha	pman	Section, Towns	ship, Rang	je S TL	acey R
Landform (hillslope, terrace, etc.):	Level	Local Relief (concave, convex	k, none): ∣	None	Slope(%) 0
Subregion (LRRor MLRA): LRR T	Lat: 39.8	310717	Long: -74.199	9280	Da	tum: WGS 1984
Soil Map Unit Name: Psammer	its, 0-2% slope		N	VI Classifi	cation: Not ma	apped
Are climatic / hydrologic conditions	on the site typical for this tim	ie of year? Yes X	No	(If No, ex	plain in Remark	s)
Are Vegetation, Soil,	Hydrology, significar	tly disturbed?	Are "Normal Cir	cumstance	es" present?	Yes X No
Are Vegetation, Soil,	Hydrology, naturally	problematic?	(If needed, ex	plain anv a	answers in Rema	arks.)
SUMMARY OF FINDINGS	Attach a sito man sh	owing compling no	, , , , , , , , , , , , , , , , , , ,	. ,		,
	-	lowing sampling po		, แลแระ	cis, importa	int leatures, etc.
Hydrophytic Vegetation Present?	Yes No X	Is the Sampled Are	2			
Hydric Soil Present?	Yes No X	within a Wetland?	d	Yes	No	x
Wetland Hydrology Present?	Yes No X			103		<u></u>
Remarks: Area sampled is not a wetland bas	ed on lack of hydrophytic ve	getation, hydric soils, and	wetland hydrolog	ду		
HYDROLOGY						
Wetland Hydrology Indicators:			S	econdary	Indicators (minin	mum of two required)
Primary Indicators (minimum of on	e is required; check all that a	apply)		Surfac	e Soil Cracks (B6)	1
Surface Water (A1)	Aquatic	Fauna (B13)		<u> </u>	ely Vegetated Con	· · ·
☐ High Water Table (A2)	Marl De	eposits (B15) (LRR U)		_	age Patterns (B10)	
Saturation (A3)	, , ,	en Sulfide Odor (C1)			Trim Lines (B16)	
Water Marks (B1)	Oxidize	d Rhizospheres along Living R	toots (C3)	_ ·	eason Water Table	(C2)
Sediment Deposits (B2)	Present	ce of Reduced Iron (C4)		Crayfis	sh Burrows (C8)	

 Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial I Water-Stained Leaves (B9) 	magery (B7)		R T	resence of Reduced Iron (C4) tecent Iron Reduction in Tilled Soils (C6) hin Muck Surface (C7) Other (Explain in Remarks)	 Saturation Visible on Aerial Imag.(C9) Geomorphic Position (D2) 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	Х	Depth (inches):	
Saturation Present?	Yes	No	х	Depth (inches):	Wetland Hydrology Present? Yes <u>No X</u>
(includes capillary fringe)	., .			· · · /	
	gauge, monitori	ng well, ae		tos, previous inspections), if available:	
	gauge, monitori	ng well, ae		· · · /	



Sampling Point: WL-A-UPL

	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet:		
Tree Stratum (Plot size: 30 Ft)	<u></u>	<u></u>		Number of Dominant Species	2	(A
Juniperus virginiana	20	Y	FACU	That Are OBL, FACW, or FAC:	2	(/
Pinus sylvestris	20	Y	NI	Total Number of Dominant	_	(=)
	40	=Total Cover		Species Across all Strata:	5	(B)
Shrub Stratum (Plot size: <u>30 Ft</u>)				Percent of Dominant Species That Are OBL, FACW, or FAC:	40.0%	(A/
Juniperus virginiana	20	Y	FACU			
Myrica pensylvanica	15 	Y	FAC	Prevalence Index Worksheet:		
Harb Stratum (DL +		=Total Cover		0	Multiply by: 1 = 0	
<u>Herb Stratum</u> (Plot size: <u>6 Ft</u>) Panicum dichotomiflorum	20	V	FACW		1 = 0 2 = 60	
Fragaria virginiana		- Y Y	FACW		2 = 00 3 = 45	
		=Total Cover				
/ine Stratum					4 = 240	
				UPL species 0 x	5 = 0	
				Column Totals: 105 (A	.) 345	(В
				Prevalence Index = B/A=	3.29	
				Hydrophytic Vegetation Indicato	ors:	
				1 - Rapid Test for Hydrophytic	c Vegetation	
				2 - Dominance Test > 50%		
				3 - Prevalence Index ≤ 3.0		
				Problematic Hydrophytic Veg	etation (Ex	olain
				Indicators of hydric soil and wetland h be present, unless disturbed or proble	ydrology must	
				Definitions of Vegetation Strata:		
				Tree – Woody plants, excluding wo approximately 20 ft (6 m) or more in (7.6 cm) or larger in diameter at bre	n height and	3 in. DBH)
				Sapling – Woody plants, excluding	woodv vines	
				approximately 20 ft (6 m) or more in than 3 in. (7.6 cm) DBH.		
				Shrub – Woody plants, excluding w approximately 3 to 20 ft (1 to 6 m) i	/oody vines, n height.	
				Herb – All herbaceous (non-woody) herbaceous vines, regardless of siz plants, except woody vines, less tha 3 ft (1 m) in height.	ze. Includes v	NOOC
				Woody vine – All woody vines, rega	ardless of he	ight.



	ption: (Des		depth ne	eded to document			confirm	the absence of Indicators.)	
Depth (inches)	Color	Matrix ⁻ (moist)	%	Color (moist)	Redox i	⁻ eatures Type ¹	Loc ²	Texture	Remarks
					70	Турс		ORGANIC/SANDY LOAM	
0 to 6 6 to 20	10YR 10YR	3/2	100			<u> </u>		SANDY SILT	40% rounded pebbles
0 10 20		570				·			
¹ Type: C=Conc	centration, [D=Depletion,	RM=Redu	uced Martix, CS=Co	overed or	Coated S	Sand Gra	ains. ² Location: PL=Pore Lining	, M=Matrix.
5 cm Mucky Muck Preser 1 cm Muck (Depleted Be Thick Dark S Coast Prairie Sandy Muck Sandy Gleyee Sandy Redo Stripped Mat) 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 cy Mineral (S1 ed Matrix (S4) px (S5)	(LRR P, T, U) R U) 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 (F17) Reduced Vertic (F17) Anomalous Bright 	(S9) (LR eral (F1) (trix (F2) (C2 (F6) (Face (F6) (F3) (F1) (MLF (Masses (F (F13) (LRR (MLRA 1 (MLRA 1 (18) (MLR (MLR 1 (MLR) (MLR)	R S, T, U) (LRR O) 12) (LRR O P, T, U) 51) A 150A, 150 F19) (MLR4	, P, T) DB) A 149A)	Indicators for Problematic H 1 cm Muck (A9) (LRR 0) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outside Piedmont Floodplain Soils (F1: Anomalous Bright Loamy Soils (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (TF Other (Explain in Remarks) ³ Indicators of hydrophytic ven hydrology must be present, unless disturbed or problem	MLRA 150A,B) 9) (LRR P, S, T) s (F20) =12) (LRR T, U) getation and wetland
Type: Depth (inche Remarks:	es):	heast of wetlan		c soils not present.				Hydric Soil Present?	/es <u>No X</u>

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 C	hapman	Section, Township, Range S T Lacey R New J
Landform (hillslope, terrace, etc.): Level	Local Relief (cc	oncave, convex, none): Concave Slope(%) 0
Subregion (LRRor MLRA): LRR T Lat: 3	9.810717	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	time of year? Yes X	No (If No, explain in Remarks)
Are Vegetation, Soil, Hydrology, signific	antly disturbed? A	Are "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, Hydrology, natural	ly problematic?	(If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS Attach a site man		nt locations, transects, important features, etc.
SUMMART OF FINDINGS - Attach a site maps	snowing sampling poin	in locations, transects, important reatures, 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
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that	it apply)	Surface Soil Cracks (B6)
	atic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)	Deposits (B15) (LRR U)	Drainage Patterns (B10)
Saturation (A3)	ogen Sulfide Odor (C1)	Moss Trim Lines (B16)
Water Marks (B1)	ized Rhizospheres along Living Roo	bots (C3) Dry-Season Water Table (C2)
Sediment Deposits (B2)	ence of Reduced Iron (C4)	Crayfish Burrows (C8)
Drift Deposits (B3)	ent Iron Reduction in Tilled Soils (Co	
Algal Mat or Crust (B4)	Muck Surface (C7)	Geomorphic Position (D2)
Iron Deposits (B5)	er (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	Х	No
Water Table Present?	Yes	Х	No
Saturation Present?	Yes	х	No

(includes capillary fringe)

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

Remarks:

Ponding observed. Wetland hydrology present.



Depth (inches):

Depth (inches):

Depth (inches):

1

To Surface

To Surface

Yes X No

Wetland Hydrology Present?

Sampling Point: WL-A-WET

		<u>Absolute</u> % Cover	<u>Dominant</u> Species	Indicator Status	Dominance Test Works	heet:		
Tree Stratum	(Plot size: 30 Ft)				Number of Dominant Sp		3	(/
Acer rubrum		10	Y	FAC	That Are OBL, FACW, o	or FAC:	3	_ (
Juniperus virgini	ana	10	- <u> </u>	FACU	Total Number of Domina	nt		
		20	=Total Cover		Species Across all Strata		4	(
Shrub Stratum	(Plot size: 30 Ft)				Percent of Dominant Spe		75.0%	(4
Myrica pensylva	•	30	Y	FAC	That Are OBL, FACW, or	FAC: -	70.070	_ (/
		30	=Total Cover		Prevalence Index Work	sheet:		
Herb Stratum	(Plot size: <u>6 Ft</u>)				Total % Cover of:		tiply by:	
Panicum dichoto	pmiflorum	90	Y	FACW	OBL species	0 x 1 =	0	
		90	=Total Cover		FACW species	00 x 2 =	180	
/ine Stratum					FAC species 4	0 x 3 =	120	
					•	0 x 4 =	40	
					•	0 x 5 =	0	
					Column Totals: 14	40 (A)	340	
					Prevalence Index =	= B/A=	2.43	
					Hydrophytic Vegetation	Indicators:		
					1 - Rapid Test for Hy	drophytic V	egetatior	ı
					X 2 - Dominance Test	> 50%		
					X 3 - Prevalence Index	< 3.0		
					Problematic Hydroph			
					be present, unless disturbed			
					Definitions of Vegetation	Strata:		
					Tree – Woody plants, excl approximately 20 ft (6 m) o (7.6 cm) or larger in diame	or more in he	eight and	
					Sapling – Woody plants, e approximately 20 ft (6 m) o than 3 in. (7.6 cm) DBH.			
					Shrub – Woody plants, exo approximately 3 to 20 ft (1	cluding wood to 6 m) in h	dy vines, eight.	
					Herb – All herbaceous (no herbaceous vines, regardle plants, except woody vines 3 ft (1 m) in height.	ess of size.	ncludes	wo
					Woody vine – All woody vi	nes, regardl	ess of he	eigl
		st)			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.



Profile Descriptio	n: (Describe to t	the depth ne	eded to documen			confirm	the absence of Indicators.)	
Depth	Matrix				Features			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 8 10	0YR 4/2	100					FINE SANDY LOAM	
8 to 20 10	OYR 4/2	80	10YR 4/6	20	С	М	FINE CLAY SAND	20% rounded pebbles
¹ Type: C=Concent	ration, D=Depletio	on, RM=Redu	uced Martix, CS=C	overed o	r Coated S	and Gra	ains. ² Location: PL=Pore Lining,	M=Matrix.
5 cm Mucky Mine Muck Presence (1 cm Muck (A9) Depleted Below Thick Dark Surfa Coast Prairie Re Sandy Mucky Mii Sandy Gleyed Mi Sandy Redox (Si Stripped Matrix (si	(A2) (A5) (A5) (A6) (LRR P, T, U) eral (A7) (LRR P, T, (LRR P, T) Dark Surface (A11) ce (A12) dox (A16) (MLRA 15 neral (S1) (LRR O, S atrix (S4) 5)	U) 50A)	 Polyvalue Below Thin Dark Surface Loamy Mucky Min Loamy Gleyed Matrix (Redox Dark Surface Depleted Dark Surface Redox Depressio Marl (F10) (LRR I Depleted Ochric (Iron-Manganese I Umbric Surface (I) Delta Ochric (F17 Reduced Vertic (I) Piedmont Floodp 	e (S9) (LR neral (F1) atrix (F2) F3) ace (F6) urface (F7) ons (F8) U) (F11) (MLR F13) (LRR 7) (MLRA - F18) (MLR	(LRR O) (LRR O) (12) (LRR O (12) (LRR O (151) (151) (151) (150A, 150A, 15)	, P, T) 0B)	Indicators for Problematic Hy 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outside M Piedmont 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 vega hydrology must be present, unless disturbed or problema	/ILRA 150A,B)) (LRR P, S, T) (F20) (2) (LRR T, U) etation and wetland
Restrictive L		ved):	Anomalous Brigh	t Loamy S	oils (F20) (N	ILRA 149		
Depth (inches):	9						Hydric Soil Present? Ye	es X No
Remarks: Hydric soils present	based on soils meet	ting criteria for t	he depleted matrix (F	3) indicato	л			

Project/Site: Orsted	City/County: Ocea	an County Sampling Date: 5/5/2020
Applicant/Owner: Ocean Wind - Holtec Property		State: NJ Sampling Point: WL-B-UPL
Investigators: Stephen Seymour Jaclyn	Chapman Section	on, Township, Range S T Lacey R
Landform (hillslope, terrace, etc.): Hillslope	Local Relief (concav	ve, convex, none): Concave Slope(%) 10
· · · · · · · · · · · · · · · · · · ·	39.810893 Long	: -74.200239 Datum: WGS 1984
Soil Map Unit Name: Psamments, 0-2% slopes		NWI Classification: Not mapped
Are climatic / hydrologic conditions on the site typical for th	is time of year? Yes X No	(If No, explain in Remarks)
Are Vegetation, Soil, Hydrology, sign	· · · · · · · · · · · · · · · · · · ·	Normal Circumstances" present? Yes X No
Are Vegetation, Soil, Hydrology, natu	nally, much la mattic 2	eeded, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach a site may	(ii ii	
Hydrophytic Vegetation Present? Yes <u>No</u>	Is the Sampled Area	
Hydric Soil Present? YesNo	X within a Wetland?	Yes No X
Wetland Hydrology Present? Yes No	x	
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)	quatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)	arl Deposits (B15) (LRR U)	Drainage Patterns (B10)
Saturation (A3)	/drogen Sulfide Odor (C1)	Moss Trim Lines (B16)
	xidized Rhizospheres along Living Roots (C	
	esence of Reduced Iron (C4)	Crayfish Burrows (C8)
	ecent Iron Reduction in Tilled Soils (C6)	Saturation Visible on Aerial Imag.(C9)
	nin Muck Surface (C7)	Geomorphic Position (D2)
Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7)	ther (Explain in Remarks)	Shallow Aquitard (D3) 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 photo	os, previous inspections), if available:	
Remarks:		
No wetland hydrology present.		



Sampling Point: WL-B-UPL

		<u>Absolute</u> <u>% Cover</u>	<u>Dominant</u> Species	Indicator Status	Dominance Test Worksheet	:		
Tree Stratum	(Plot size: 30 Ft)		_ <u></u>		Number of Dominant Species		C	
Pinus resinosa	(FIOUSIZE: <u>50 FL</u>)	30	Y	FACU	That Are OBL, FACW, or FA	C:	2	(/
Prunus virginiana		20	- <u>Y</u>	FACU	Total Number of Dominant			
Pinus sylvestris			- <u>Y</u>	NI	Species Across all Strata:		7	(E
		60						_ `
Shrub Stratum	(Plot size: _30 Ft)		_=Total Cover		Percent of Dominant Species That Are OBL, FACW, or FAC		28.6%	(A
Prunus virginiana		25	Y	FACU	Prevalence Index Workshee	et:		
		25	=Total Cover		Total % Cover of:	Multi	oly 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 virginian	a	10	Y	FACU		x 3 =	90	
Thuja occidentalis	-	10	Y	FACW	rac species			
		50			FACU species 95	x 4 =	380	
line Stratum			=Total Cover		UPL species 0	x 5 =	0	
/ine Stratum	(Plot size: <u>30 Ft</u>)				Column Totals: 135	(A)	490	(
Celastrus orbiculate	us	10	Y	FACU		_`´ _		`
		10	=Total Cover		Prevalence Index = B/A	=	3.63	
					Hydrophytic Vegetation India	atore:		
					1 - Rapid Test for Hydrop		getation	
					2 - Dominance Test > 50	%		
					3 - Prevalence Index ≤ 3.	0		
					Duchleur etie Lluducuh, die 1		(-	
					Problematic Hydrophytic	vegetati	on (Ex∣	SIA
					Indicators of hydric soil and wetla be present, unless disturbed or pr			
					Definitions of Vegetation Stra	ita:		
					Tree – Woody plants, excluding			
					approximately 20 ft (6 m) or mo (7.6 cm) or larger in diameter a			
					Sapling – Woody plants, exclud approximately 20 ft (6 m) or mo			
					than 3 in. (7.6 cm) DBH.		gin and	103
					Shrub – Woody plants, excludir approximately 3 to 20 ft (1 to 6			
					Herb – All herbaceous (non-wo	ody) plar	nts, inclu	ıdiı
					herbaceous vines, regardless o plants, except woody vines, les 3 ft (1 m) in height.	f size. In	cludes v	woo
					Woody vine – All woody vines,	regardle	ss of he	igh
					Hydrophytic			

Hydrophytic vegetation not dominant based on less than 50% of species that are OBL, FACW, or FAC and prevalence index greater than 3



Profile Description: (Describe	to the depth ne	eded to document	t the ind	icator or	confirm	the absence of Indicators.)	
Depth Mat				eatures			
(inches) Color (mois	t) %	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 8 10YR 3/	2 100					FINE SANDY LOAM	
8 to 18 10YR 5/	3 100					FINE CLAY LOAM	
18 to 20 10YR 2/	1 100					GRANULAR BLACK	Granular coal residue
¹ Type: C=Concentration, D=Depl	letion, RM=Red	uced Martix, CS=Co	overed or	Coated S	Sand Gra	ains. ² Location: PL=Pore Lining	ı, 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, L 5 cm Mucky Mineral (A7) (LRR P Muck Presence (A8) (LRR U) 1 cm Muck (A9) (LRR P, T) Depleted Below Dark Surface (A2) Coast Prairie Redox (A16) (MLR4 Sandy Mucky Mineral (S1) (LRR C) Sandy Gleyed Matrix (S4) Sandy Redox (S5)	, T, U) 11) A 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 (I Iron-Manganese N Umbric Surface (F Delta Ochric (F17) Reduced Vertic (F 	(S9) (LR) eral (F1) (atrix (F2) (atrix (F2) (atrix (F3) (face (F6) (F3) (F1) (MLF) Masses (F (F13) (LRR) (MLRA 1)	R S, T, U) LRR O) 12) (LRR O P, T, U) 51)	, P, T)	Indicators for Problematic H 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outside 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 very hydrology must be present, unless disturbed or problem	MLRA 150A,B) 9) (LRR P, S, T) 5 (F20) ^E 12) (LRR T, U) getation and wetland
Stripped Matrix (S6)	U)	Piedmont Floodpla					
		Anomalous Bright	Loamy So	oils (F20) (I	MLRA 149	9A, 153C, 153D)	
Restrictive Layer (if obs Type:	erved):					Hydric Soil Present?	′es No X
Depth (inches):							
Remarks: Layer of coal residue (black, granular	r) encountered at 1	18-20" below ground su	ırface. No	hydric soils	s present d	due to not meeting any indicator criteria.	

Project/Site: Orsted	City/County: O	Ocean County Sampling Date: 8/10/2020
Applicant/Owner: Ocean Wind - Holtect Property		State: NJ Sampling Point: WL-B-WET2
nvestigators: Zak Lehmann Jac	lyn Chapman Se	ection, Township, Range S T Lacey R
andform (hillslope, terrace, etc.): Level	Local Relief (con	ncave, convex, none): Concave Slope(%) 0
Subregion (LRRor MLRA): LRR T La	it: 39.810737 Lo	ong: -74.200351 Datum: WGS 1984
Soil Map Unit Name: Psamments, 0-2% slopes		NWI Classification: None
Are climatic / hydrologic conditions on the site typical for	this time of year? Yes X	No (If No, explain in Remarks)
re Vegetation, Soil, Hydrology, si	gnificantly disturbed? Are	re "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, Hydrology, na	aturally problematic?	(If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach a site m	ap showing sampling point	t locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X No		
Hydric Soil Present? Yes X No	Is the Sampled Area within a Wetland?	Yes Y No
Wetland Hydrology Present? Yes X No		Yes X No
Remarks: Area is a wetland based on presence of hydrophytic ve	jetation, hydric soils, and wetland hy	'drology
IYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)

wetland Hydrology Indicators:						Secondary indicators (minimum or two required)			
Primary Indicators (minimum of	one is r	require	ed; ch	eck all that apply)		Surface 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 Imagery (B7) Water-Stained Leaves (B9) 				Aquatic Fauna (B13) Arr Deposits (B15) (LRR Hydrogen Sulfide Odor (C Oxidized Rhizospheres alc Presence of Reduced Iron Recent Iron Reduction in T Thin Muck Surface (C7) Other (Explain in Remarks	1) ong Living Roots (C3) (C4) Tilled Soils (C6)	 Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16) De Service Middle Teiller (20) 			
Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (stream gau	Yes Yes Yes Ige, monif	X X X	No No No well, ac	Depth (inches): Depth (inches): Depth (inches): Perial photos, previous inspections)	2 To surface To surface), if available:	Wetland Hydrology Present? Yes X No			
Remarks: Wetland hydrology present									



Sampling Point: WL-B-WET2

	<u>Absolute</u> <u>% Cover</u>	<u>Dominant</u> Species	Indicator Status	Dominance Test Workshe	et:		
Tree Stratum				Number of Dominant Spec That Are OBL, FACW, or F		1	(4
Shrub Stratum					AU		_`
Herb Stratum (Plot size: 6 Ft)				Total Number of Dominant Species Across all Strata:		1	(E
Phragmites australis	100	Y	FACW			•	_ (-
Vine Stratum	100	=Total Cover		Percent of Dominant Specie That Are OBL, FACW, or F		100.0%	(A
				Prevalence Index Worksheet:			
				Total % Cover of:		ply 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	
				Prevalence Index = B	/A=	2.00	
				Hydrophytic Vegetation Inc	licators:		
				1 - Rapid Test for Hydro	ophytic Ve	getation	
				X 2 - Dominance Test > 5	0%		
				X 3 - Prevalence Index ≤	3.0		
				Problematic Hydrophyti	c Vegetati	on (Exp	pla
				Indicators of hydric soil and we be present, unless disturbed or			
				Definitions of Vegetation St	rata:		
				Tree – Woody plants, excludi approximately 20 ft (6 m) or n (7.6 cm) or larger in diameter	nore in hei	ght and	
				Sapling – Woody plants, excl approximately 20 ft (6 m) or n than 3 in. (7.6 cm) DBH.			
				Shrub – Woody plants, exclud approximately 3 to 20 ft (1 to			
				Herb – All herbaceous (non-w herbaceous vines, regardless plants, except woody vines, le 3 ft (1 m) in height.	of size. Ir	cludes v	wo
				Woody vine – All woody vines	s, regardle	ss of he	igł
				Hydrophytic Vegetation Present? Y			



Profile Descr	ription: (Des	cribe to the	e depth ne	eeded to documen			confirm	n the absence of Indicators.)	
Depth		Matrix				Features			
(inches)	Color	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	М	SANDY CLAY	70% particles masked with organic
¹ Type: C=Cor	ncentration, E)=Depletion,	RM=Red	luced Martix, CS=Co	overed o	r Coated S	Sand Gra	ains. ² Location: PL=Pore Lining,	M=Matrix.
Hydric Soil I				 Polyvalue Below Thin Dark Surface 			T, U)	Indicators for Problematic Hy	dric Soils: ³
Histic Epip	edon (A2)			Loamy Mucky Mir				2 cm Muck (A10) (LRR S)	
Black Histi	c (A3)							Reduced Vertic (F18) (outside N	
Hydrogen S	Sulfide (A4)			Loamy Gleyed Ma				Piedmont Floodplain Soils (F19	
Stratified L	ayers (A5)			Depleted Matrix (I	F3)			Anomalous Bright Loamy Soils	
Organic Bo	odies (A6) (LRF	R P, T, U)		Redox Dark Surfa	ace (F6)			(MLRA 153B)	(120)
5 cm Muck	y Mineral (A7)	(LRR P, T, U)		Depleted Dark Su	urface (F7))		Red Parent Material (TF2)	
Muck Pres	ence (A8) (LRF	R U)		Redox Depression	ns (F8)			Very Shallow Dark Surface (TF	12) (LRR T, U)
1 cm Muck	(A9) (LRR P,	T)		Marl (F10) (LRR U	L)			Other (Explain in Remarks)	, ,
Depleted B	elow Dark Sur	face (A11)							
Thick Dark	Surface (A12)							³ Indicators of hydrophytic veg hydrology must be present.	etation and wetland
Coast Prair	rie Redox (A16) (MLRA 150A	()	Iron-Manganese I		, ,), P, T)	unless disturbed or problema	atic.
Sandy Muc	ky Mineral (S1) (LRR O, S)		Umbric Surface (I					
Sandy Gley	yed Matrix (S4)			Delta Ochric (F17	') (MLRA 1	151)			
Sandy Red				Reduced Vertic (F	=18) (MLR	A 150A, 15	0B)		
Stripped M				Piedmont Floodpl	lain Soils (F19) (MLR	A 149A)		
Dark Surfa	ce (S7) (LRR F	P, S, T, U)		Anomalous Bright	t Loamy S	oils (F20) (MLRA 149	9A, 153C, 153D)	
Restrict	ive Layer (if observe	d):						
Туре:								Hydric Soil Present? Ye	es X No
Depth (inch	nes):								
Remarks:									
Hydric soil indi	cators present								



Applicant/Owner: Ocean Wind - Holtec Property State: NJ Sampling Point: WL-C-UP Investigators: Zak Lehmann Jaclyn 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: 39.810631 Long: -74.201509 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 time of year? Yes X No (If No, explain in Remarks) Are Vegetation
Landform (hillslope, terrace, etc.): Level Local Relief (concave, convex, none): None Slope(%) 0 Subregion (LRRor MLRA): LRR T Lat: 39.810631 Long: -74.201509 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 time of year? Yes X No (If No, explain in Remarks) Are Vegetation
Subregion (LRRor MLRA): LRR T Lat: 39.810631 Long: -74.201509 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 time of year? Yes X No (If No, explain in Remarks) Are Vegetation
Soil Map Unit Name: Psamments, 0-2% 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
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If No, explain in Remarks) Are Vegetation
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, etc. Hydrophytic Vegetation Present? Yes No _X Hydric Soil Present? Yes No _X Wetland Hydrology Present? Yes No _X Remarks: Yes No _X
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, etc. Hydrophytic Vegetation Present? YesNoX Hydric Soil Present? YesNoX Wetland Hydrology Present? YesNoX Remarks: YesNoX
SUMMARY OF FINDINGS - Attach a site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes No X Hydric Soil Present? Yes No X Wetland Hydrology Present? Yes No X Remarks: Kemarks: Kemarks: Kemarks:
Hydrophytic Vegetation Present? Yes No X Hydric Soil Present? Yes No X Wetland Hydrology Present? Yes No X Remarks: Is the Sampled Area within a Wetland? Yes No X
Hydric Soil Present? Yes No X Wetland Hydrology Present? Yes No X Remarks: Is the Sampled Area within a Wetland? Yes No
Hydric Soil Present? Yes No X Wetland Hydrology Present? Yes No X Remarks: Is the Sampled Area within a Wetland? Yes No
Wetland Hydrology Present? Yes No X Remarks: Yes No X
HYDROLOGY
Wetland Hydrology Indicators: Secondary Indicators (minimum of two required) Primary Indicators (minimum of one in required) shoeld all that apply) 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)

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 Ima Water-Stained Leaves (B9)	agery (B7)		Ma Hyc Oxi Oxi Pre Rec Thi	uatic Fauna (B13) rl Deposits (B15) (LRR U) drogen Sulfide Odor (C1) dized Rhizospheres along Living Roots (C3) esence of Reduced Iron (C4) cent Iron Reduction in Tilled Soils (C6) in Muck Surface (C7) ner (Explain in Remarks)	 Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (C2) 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)
Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (stream ga	Yes Yes Yes uge, monitor	No No No	_X _X _X	Depth (inches): Depth (inches): Depth (inches): s, previous inspections), if available:	Wetland Hydrology Present? Yes No_X
Remarks: No wetland hydrology present					



				Absolute	Dominant_	Indicator	Dominance Test V	Norkehoot			
				<u>% Cover</u>	Species	<u>Status</u>					
ree Stratum	(Plot size:	30 Ft)				Number of Domina That Are OBL, FA	CW, or FA	2:	3	(/
Juniperus virginian	a			10	Y	FACU		,			
Prunus serotina				5	Y	FACU	Total Number of Do			_	
				15	=Total Cover		 Species Across all 	Strata:		7	(E
hrub Stratum	(Plot size:	30 Ft)				Percent of Domina	nt Species		40.00/	
Myrica pensylvanic	•	3011	/	50	Y	FAC	That Are OBL, FAC		:	42.9%	(A
Rhus copallinum				40	Y	UPL	Prevalence Index	Worksheet	t:		
				90	=Total Cover		Total % Cover			oly by:	
erb Stratum		C F +	1					0	x 1 =	0	
	(Plot size:	6 Ft)	4	V	FAC	OBL species				
Mollugo verticillata				1	Y	FAC	FACW species	1	x 2 =	2	
Osmundastrum cin	namomeum			1	Y	FACW	FAC species	51	x 3 =	153	
				2	=Total Cover		FACU species	100	x 4 =	400	
ine Stratum	(Plot size:	30 Ft)				UPL species	40	x 5 =	200	
Rubus idaeus				80	Y	FACU		192	(A)	755	(E
Parthenocissus qu	inquefolia			5	N	FACU	Column Totals:	102	(~)	100	(1
				85	=Total Cover		Prevalence li	ndex = B/A:	=	3.93	
							Hydrophytic Veget				
							1 - Rapid Test	for Hydroph	iytic Veg	getation	
								• •			
							2 - Dominance	Test > 50%	, 0		
							2 - Dominance 3 - Prevalence				
								Index ≤ 3.0)	on (Ex	
							3 - Prevalence	Index ≤ 3.0 ydrophytic ∖ oil and wetlar	/egetatio	gy must	
							3 - Prevalence Problematic Hy Indicators of hydric so	Index ≤ 3.0 ydrophytic \ oil and wetlar sturbed or pro	/egetatio d hydrolo oblematic	gy must	
							3 - Prevalence Problematic Hy Indicators of hydric so be present, unless di	Index \leq 3.0 ydrophytic \ oil and wetlar <u>sturbed or pro</u> tation Strat S, excluding 6 m) or moi	/egetation d hydrolo bblematic t a: woody v re in heig	gy must vines, ght and	plai
							3 - Prevalence Problematic Hy Indicators of hydric so be present, unless di Definitions of Vege Tree – Woody plants approximately 20 ft (Index \leq 3.0 ydrophytic \ oil and wetlar sturbed or pro- tation Strat s, excluding 6 m) or mon diameter at unts, excludi 6 m) or mon	/egetatio d hydrolo bblematic ta: woody v re in heig breast h ng wood	yines, ght and neight (I	olai 3 ir DBH
							3 - Prevalence Problematic Hy Indicators of hydric so be present, unless di Definitions of Vege Tree – Woody plants approximately 20 ft ((7.6 cm) or larger in of Sapling – Woody pla approximately 20 ft (Index \leq 3.0 ydrophytic N oil and wetlar sturbed or pro- tation Strat s, excluding 6 m) or mou diameter at onts, excludi 6 m) or mou BH. ts, excludin	/egetatic oblematic oblematic ta: woody v e in heig breast f ng woody e in heig g woody	yines, ght and height (I dy vines ght and vines,	olai 3 ir DBH
							3 - Prevalence Problematic Hy Indicators of hydric so be present, unless di Definitions of Vege Tree – Woody plants approximately 20 ft ((7.6 cm) or larger in of Sapling – Woody plan approximately 20 ft (than 3 in. (7.6 cm) D Shrub – Woody plan	Index \leq 3.0 ydrophytic N oil and wetlar <u>sturbed or pro-</u> tation Stra 6, excluding 6 m) or mou diameter at ants, excludi 6 m) or mou BH. ts, excludin 0 ft (1 to 6 r us (non-woo egardless of	/egetatio d hydrolo bblematic bblematic ta: woody v e in heig breast h ng woody re in heig g woody n) in hei ody) plar size. In	yines, ght and height (I dy vines ght and vines, ght. hts, inclucion	3 ir 3 ir DBH , les:
							3 - Prevalence Problematic Hy Indicators of hydric si be present, unless di Definitions of Vege Tree – Woody plants approximately 20 ft ((7.6 cm) or larger in or Sapling – Woody plan approximately 20 ft (than 3 in. (7.6 cm) D Shrub – Woody plan approximately 3 to 20 Herb – All herbaceou herbaceous vines, re plants, except woody	Index ≤ 3.0 ydrophytic \ oil and wetlar sturbed or pro tation Strat s, excluding 6 m) or mou diameter at unts, excludi 6 m) or mou BH. ts, excludin 0 ft (1 to 6 r us (non-woo gardless of y vines, less	/egetatio d hydrolo bblematic ta: woody v e in heig breast f ng woody n) in hei dy) plar size. In than ap	yines, ght and height (I dy vines ght and vines, ght. dts, inclu cludes oproxim	3 ir DBH , les:

Remarks: (Include photo numbers here or on a separate sheet.)

No hydric vegetation dominance



	ption: (Describe to t Matrix	he depth no	eeded to document		l <mark>icator or</mark> Features	confirm	n the absence of Indicators.)	
Depth (inches)	Color (moist)	%	Color (moist)	%	Type ¹	L oc 2	Texture	Remarks
0 to 20	10YR 5/1	60	10YR2/1	40	C	M	SAND	
0 10 20	10TK 571	00	101R2/1	40	<u> </u>			
¹ Type: C=Cond	centration, D=Depletio	on, RM=Red	luced Martix, CS=Co	overed o	r Coated	Sand Gra	ains. ² Location: PL=Pore Linin	g, M=Matrix.
Hydric Soil Ir Histosol (A1 Histic Epipe Black Histic) don (A2)		Polyvalue Below S Thin Dark Surface Loamy Mucky Mir	e (S9) (LR neral (F1)	R S, T, U)	T, U)	Indicators for Problematic H	
Hydrogen Sulfide (A4) Loamy Gleyed Matrix Stratified Layers (A5) Depleted Matrix (F3) Organic Bodies (A6) (LRR P, T, U) Redox Dark Surface)	19) (LRR P, S, T) s (F20)		
1 cm Muck (Depleted Be	nce (A8) (LRR U) (A9) (LRR P, T) elow Dark Surface (A11)	Redox Depressions (F8)					Red Parent Material (TF2) Very Shallow Dark Surface (T Other (Explain in Remarks) ³ Indicators of hydrophytic ve	
Coast Prairie	Surface (A12) e Redox (A16) (MLRA 15 cy Mineral (S1) (LRR O, 5 ed Matrix (S4)	,	Iron-Manganese M Umbric Surface (F Delta Ochric (F17 Reduced Vertic (F	=13) (LRR) (MLRA 1	2 P, T, U) 151)	-	hydrology must be present unless disturbed or probler	,
Stripped Ma Dark Surfac	trix (S6) e (S7) (LRR P, S, T, U)		Reduced Vertic (F Piedmont Floodpl Anomalous Bright	ain Soils ((F19) (MLR	A 149A)	9A, 153C, 153D)	
Type: Depth (inche	ve Layer (if observ	ved):					Hydric Soil Present?	Yes No X
Remarks:								
Remarks: No hydric soils								

Project/Site: Orsted		City/County: O	cean County Sampling Date: 5/5	5/2020				
Applicant/Owner: Ocean Wind - Holtec	Property		State: NJ Sampling Point: WL					
Investigators: Stephen Seymour	Jaclyn Chap	man Se	ection, Township, Range S T Lacey	R				
	Hillslope		· · · · ·	Slope(%) 5				
Subregion (LRRor MLRA): LRR T	Lat: 39.8		ong: -74.200654 Datum: W					
• · · · ·			NWI Classification: Not mapped					
Soil Map Unit Name: Psamments, 0-2%	•							
Are climatic / hydrologic conditions on the s		•	No (If No, explain in Remarks)					
Are Vegetation, Soil, Hydrold		-	e "Normal Circumstances" present? Yes	X No				
Are Vegetation, Soil, Hydrold	ogy, naturally p	roblematic? (I	If needed, explain any answers in Remarks.)					
SUMMARY OF FINDINGS - Attac	<u>h a site map sho</u>	owing sampling point	locations, transects, important fea	atures, etc.				
Hydrophytic Vegetation Present? Yes	X No							
Hydric Soil Present? Yes	X No	Is the Sampled Area						
Wetland Hydrology Present? Yes		within a Wetland?	Yes X No					
Remarks:								
30' south of wetland discharge to Oyster C	reek. Area is a wetlar	nd due to presence of hydrop	hytic vegetation, hydric soils, and wetland hyd	Irology				
HYDROLOGY								
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requestion) Surface Water (A1) High Water Table (A2)	Aquatic F	Fauna (B13)	Secondary Indicators (minimum of Surface Soil Cracks (B6) Sparsely Vegetated Concave Sur Drainage Patterns (B10)					
Saturation (A3)		oosits (B15) (LRR U)	Moss Trim Lines (B16)					
Water Marks (B1)	_ ` `	n Sulfide Odor (C1) Rhizospheres along Living Roots						
Sediment Deposits (B2)		e of Reduced Iron (C4)	Crayfish Burrows (C8)					
Drift Deposits (B3)	_	on Reduction in Tilled Soils (C6)	Saturation Visible on Aerial Imag	.(C9)				
Algal Mat or Crust (B4)		ck Surface (C7)	Geomorphic Position (D2)					
Iron Deposits (B5)	Other (E	xplain 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		oth (inches):	_					
Water Table Present? Yes X		oth (inches): Surface	Wetland Hydrology Present? Yes	X No				
Saturation Present? Yes X (includes capillary fringe)	No Dep	oth (inches): Surface						
Describe Recorded Data (stream gauge, monitorin	g well, aerial photos, prev	vious inspections), if available:						
Remarks:								
Wetland hydrology present								



Sampling Point: WL-C-WET

				<u>Absolute</u> <u>% Cover</u>	<u>Dominant</u> Species	Indicator Status	Dominance Test Workshee	et:		
Tree Stratum	(Plot size:	30 Ft	_)				Number of Dominant Specie That Are OBL, FACW, or F/		5	(
Acer rubrum				60	Y	FAC	-			-
				60	=Total Cover		Total Number of Dominant Species Across all Strata:		5	(
<u>Shrub Stratum</u> Clethra alnifolia	(Plot size:	30 Ft	_)	70	Y	FACW	Percent of Dominant Species		400.00/	_ ,
Acer rubrum				20	- <u> </u>	FAC	That Are OBL, FACW, or FA		100.0%	_ (.
				90	=Total Cover		Prevalence Index Workshe	et:		
Herb Stratum	(Plot size:	6 Ft)				Total % Cover of:	Multi	ply by:	
Phragmites austra	-	011	_ /	40	Y	FACW	OBL species 0	x 1 =	0	
Onoclea sensibilis				20	Y	FACW	FACW species 130	x 2 =	260	
				60	=Total Cover		FAC species 80	x 3 =	240	
Vine Stratum	(Plot size:	20 Et	1				FACU species 1	x 4 =	4	
Toxicodendron pul	-	3011	_ /	1	N	FACU	UPL species 0	x 5 =	0	
				1	=Total Cover		Column Totals: 211	(A)	504	
							Prevalence Index = B/		2.39	
							Hydrophytic Vegetation Ind		2.00	
							1 - Rapid Test for Hydro		netation	1
							X 2 - Dominance Test > 50		geration	
							X 3 - Prevalence Index \leq 3			
							Problematic Hydrophytic	Vegetati	on (Exp	pla
							Indicators of hydric soil and weth be present, unless disturbed or p			
							Definitions of Vegetation Str	ata:		
							Tree – Woody plants, excludin approximately 20 ft (6 m) or m (7.6 cm) or larger in diameter a	ore in hei	ght and	
							Sapling – Woody plants, exclu approximately 20 ft (6 m) or m 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-we herbaceous vines, regardless plants, except woody vines, les 3 ft (1 m) in height.	of size. Ir	cludes v	wc
							Woody vine – All woody vines,	regardle	ss of he	igł
							Hydrophytic Vegetation Present? Ye	es X	_No	
marks: (Include photo	numbers her	re or on a s	eparate sheet.)							



	ription: (Des	cribe to the Matrix	depth ne	eded to documen		l icator or Features	confirm	the absence of Indicators.)	
Depth (inches)	Colo	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
¹ Type: C=Con	centration, I	D=Depletion,	RM=Redu	uced Martix, CS=Co	overed o	r Coated S	Sand Gra	ains. ² Location: PL=Pore L	ning, M=Matrix.
 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) 				Polyvalue Below Surface (S8) (LRR S, T, U) Indicators for Problematic Hydric Soils: ³ Indicators for Problematic Hydric Soils: ¹ Inditin Hydric Soils: ¹ I					side MLRA 150A,B) 5 (F19) (LRR P, S, T) Soils (F20)) e (TF12) (LRR T, U)
Thick Dark Coast Prair Sandy Muc Sandy Gley Sandy Red Stripped Mac	Surface (A12) rie Redox (A16 ky Mineral (S1 yed Matrix (S4) lox (S5))) (MLRA 150A) (LRR O, S))	 	Depleted Ochric (Iron-Manganese I Umbric Surface (I Delta Ochric (F17 Reduced Vertic (F Piedmont Floodpl Anomalous Brigh	Masses (F F13) (LRR /) (MLRA ⁻ F18) (MLR lain Soils (12) (LRR C P, T, U) 151) A 150A, 15 F19) (MLR.	0B) A 149A)	hydrology must be prea unless disturbed or pro	
Restrict Type: Depth (inch		if observe	d):					Hydric Soil Present?	Yes X No
Remarks: Extensive orga	nic material fo	und within the	first 9 in of t	he soil profile. Hydric	soils prese	ent 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: Ocean Wind - JCP&L Property	State: NJ Sampling Point: WL-D-UP
Investigators: Zak Lehmann Jaclyn Cha	pman 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: 39.8	B10493 Long: -74.200617 Datum: WGS 1984
Soil Map Unit Name: Manahawkin muck, 0-2% slopes, frequ	ently flooded NWI Classification: Not mapped
Are climatic / hydrologic conditions on the site typical for this tim	e of year? Yes X No (If No, explain in Remarks)
Are Vegetation, Soil, Hydrology, significan	tly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, Hydrology, naturally	
SUMMARY OF FINDINGS - Attach a site map sh	owing sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X No	
Hydric Soil Present? Yes No X	Is the Sampled Area
Wetland Hydrology Present? Yes No X	within a Wetland? Yes <u>No X</u>
High Water Table (A2) Marl De Saturation (A3) Hydroge Water Marks (B1) Oxidized	Fauna (B13) Sparsely Vegetated Concave Surface (B8) eposits (B15) (LRR U) Drainage Patterns (B10) en Sulfide Odor (C1) Moss Trim Lines (B16) d Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2)
	ce of Reduced Iron (C4) Crayfish Burrows (C8) Iron Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imag.(C9)
	Ick Surface (C7)
	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:	
	pth (inches):
	epth (inches): Wetland Hydrology Present? Yes No_X_
	pth (inches): Wetland Hydrology Present? fes No_X_
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, pro	evious inspections), if available:
Remarks:	
No wetland hydrology present	
······	



Sampling Point: WL-D-UP

		<u>Absolute</u> % Cover		Indicator Status	Dominance Test Worksheet:		
Tree Stratum	(Plot size: 30 Ft	<u></u>			Number of Dominant Species	n	(A
Juniperus virgin	· /	20	Y	FACU	That Are OBL, FACW, or FAC:	2	_ (/
		20			Total Number of Dominant		
Shrub Stratum					Species Across all Strata:	5	(B
	(Plot size: <u>30 Ft</u>)	5	Y	FACU	Percent of Dominant Species		
Juniperus virgin Myrica pensylva		5		FACU	That Are OBL, FACW, or FAC:	40.0%	(A
Acer rubrum	TICA	3	N	FAC	Prevalence Index Worksheet:		
Pinus rigida		1	N	FACU		14	
		12			0	ltiply by: = 0	
Herb Stratum							
	(Plot size: <u>6 Ft</u>)	00	V		FACW species 70 x 2		
Phragmites aus		60		FACW	FAC species 7 x 3		
Solidago sempe Polygonum ach		10	N	FACW	FACU species 27 x 4	= 108	
	orouni	71			UPL species 0 x 5	= 0	
ling Strature			=Total Cover		Column Totals: 104 (A)	269	(
/ine Stratum	(Plot size: <u>30 Ft</u>						
Rubus idaeus		1	Y	FACU	Prevalence Index = B/A=	2.59	
		1	=Total Cover		Hydrophytic Vegetation Indicators		
					1 - Rapid Test for Hydrophytic \		
						egetation	
					2 - Dominance Test > 50%		
					X 3 - Prevalence Index \leq 3.0		
					Problematic Hydrophytic Vegeta	ation (Ex	plai
					Indicators of hydric soil and wetland hydri be present, unless disturbed or problema	ology must	•
					Definitions of Vegetation Strata:		
					Tree – Woody plants, excluding wood approximately 20 ft (6 m) or more in h (7.6 cm) or larger in diameter at breas	eight and	3 ir DB⊦
					Sapling – Woody plants, excluding wo approximately 20 ft (6 m) or more in h than 3 in. (7.6 cm) DBH.		
					Shrub – Woody plants, excluding woo approximately 3 to 20 ft (1 to 6 m) in h		
					Herb – All herbaceous (non-woody) p herbaceous vines, regardless of size. plants, except woody vines, less than 3 ft (1 m) in height.	Includes	woo
					Woody vine – All woody vines, regard	lless of he	ight
					Hydrophytic Vegetation Present? Yes X	No	
narks: (Include pho	to numbers here or on a sep	rate sheet.)					



Dopth Matrix	-			••••••	he absence of Indicators.)	
		Redox F				
(inches) Color (moist)	% Color (moist) %	Type ¹	Loc ²	Texture	Remarks
0 to 10 10YR 4/3					SANDY LOAM	
¹ Type: C=Concentration, D=Depletion,	RM=Reduced Martix	, CS=Covered or	Coated Sa	and Grai	ns. ² Location: PL=Pore Lining,	, M=Matrix.
Hydric Soil Indicators:	Polvvalu	ie Below Surface (S	8) (LRR S. T	. U)	Indicators for Problematic Hy	dric Soils: ³
Histosol (A1)		rk Surface (S9) (LRF		, ,	1 cm Muck (A9) (LRR O)	
Histic Epipedon (A2)		Mucky Mineral (F1) (2 cm Muck (A10) (LRR S)	
Black Histic (A3)	Loamy (Gleyed Matrix (F2)			Reduced Vertic (F18) (outside N	MLRA 150A,B)
Stratified Layers (A5)	Deplete	d Matrix (F3)			Piedmont Floodplain Soils (F19) (LRR P, S, T)
Organic Bodies (A6) (LRR P, T, U)		Dark Surface (F6)			Anomalous Bright Loamy Soils	(F20)
\Box 5 cm Mucky Mineral (A7) (LRR P, T, U)		d Dark Surface (F7)			(MLRA 153B)	
Muck Presence (A8) (LRR U)		Depressions (F8)			Red Parent Material (TF2) Very Shallow Dark Surface (TF	12) (LRR T 11)
1 cm Muck (A9) (LRR P, T)		0) (LRR U)			Other (Explain in Remarks)	12)(ERR(1, 0)
Depleted Below Dark Surface (A11)		d Ochric (F11) (MLR	Δ 151)			
Thick Dark Surface (A12)		nganese Masses (F1	,	р т)	³ Indicators of hydrophytic veg hydrology must be present,	etation and wetland
Coast Prairie Redox (A16) (MLRA 150A		Surface (F13) (LRR	,,	F, I)	unless disturbed or problema	atic.
Sandy Mucky Mineral (S1) (LRR O, S)		chric (F17) (MLRA 1				
Sandy Gleyed Matrix (S4)		. , .	,			
Stripped Matrix (S6)		d Vertic (F18) (MLR		,		
Dark Surface (S7) (LRR P, S, T, U)		nt Floodplain Soils (F				
	Anomal	ous Bright Loamy So	oils (F20) (M	LRA 149A	A, 153C, 153D)	
Restrictive Layer (if observed	d):					
Type: Fill Depth (inches): 10					Hydric Soil Present? Ye	es No X
Type: Fill					Hydric Soil Present? Yo	es No X
Type: _Fill Depth (inches):10	or concretions				Hydric Soil Present? Yo	es No X
Type: Fill Depth (inches): 10 Remarks:	or concretions				Hydric Soil Present? Y	es No _X
Type: Fill Depth (inches): 10 Remarks:	or concretions				Hydric Soil Present? Y	es <u>No X</u>
Type: Fill Depth (inches): 10 Remarks:	or concretions				Hydric Soil Present? Yo	es No X
Type: Fill Depth (inches): 10 Remarks:	or concretions				Hydric Soil Present? Y	es <u>No X</u>
Type: Fill Depth (inches): 10 Remarks:	or concretions				Hydric Soil Present? Y	es No _X
Type: Fill Depth (inches): 10 Remarks:	or concretions				Hydric Soil Present? Y	es No _X
Type: Fill Depth (inches): 10 Remarks:	or concretions				Hydric Soil Present? Y	es No _X
Type: Fill Depth (inches): 10 Remarks:	or concretions				Hydric Soil Present? Y	es No _X
Type: Fill Depth (inches): 10 Remarks:	or concretions				Hydric Soil Present? Y	es No _X
Type: Fill Depth (inches): 10 Remarks:	or concretions				Hydric Soil Present? Y	es No _X
Type: Fill Depth (inches): 10 Remarks:	or concretions				Hydric Soil Present? Y	es No _X
Type: Fill Depth (inches): 10 Remarks:	or concretions				Hydric Soil Present? Y	es No _X
Type: Fill Depth (inches): 10 Remarks:	or concretions				Hydric Soil Present? Y	es No _X
Type: Fill Depth (inches): 10 Remarks:	or concretions				Hydric Soil Present? Y	es No _X
Type: Fill Depth (inches): 10 Remarks:	or concretions				Hydric Soil Present? Y	es No _X

Project/Site: Orsted	City/County: Oce	an County Sampling Date: 8/10/2020
Applicant/Owner: Ocean Wind - Holtec Property		State: NJ Sampling Point: WL-D-WET
Investigators: Zak Lehmann Jaclyn	Chapman Sect	tion, Township, Range S T Lacey R
Landform (hillslope, terrace, etc.): Toe of Slope	Local Relief (conca	ave, convex, none): Concave Slope(%) 0
Subregion (LRRor MLRA): LRR T Lat:	39.810428 Long	g: -74.200485 Datum: WGS 1984
Soil Map Unit Name: Manahawkin muck, 0 2 percent sl	opes, frequently flooded	NWI Classification: PSS1Eh
Are climatic / hydrologic conditions on the site typical for thi	s time of year? Yes X No	(If No, explain in Remarks)
Are Vegetation, Soil, Hydrology, signi	ficantly disturbed? Are "	Normal Circumstances" present? Yes X No
Are Vegetation, Soil, Hydrology, nature	ally problematic? (If n	needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach a site map		
Hydrophytic Vegetation Present? Yes X No	Is the Sampled Area	
Hydric Soil Present? Yes X No	within a Wetland?	Yes X No
Wetland Hydrology Present? Yes X No		
HYDROLOGY		
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all t	hat annly)	Secondary Indicators (minimum of two required)
✓ Surface Water (A1) □ Aq ✓ High Water Table (A2) □ Ma ✓ Saturation (A3) □ Hy ✓ Water Marks (B1) □ Ox □ Sediment Deposits (B2) □ □ □ Drift Deposits (B3) □ Ref □ Algal Mat or Crust (B4) □ Th	uatic Fauna (B13) arl Deposits (B15) (LRR U) drogen Sulfide Odor (C1) idized Rhizospheres along Living Roots (C esence of Reduced Iron (C4) ecent Iron Reduction in Tilled Soils (C6) in Muck Surface (C7) her (Explain in Remarks)	 Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imag.(C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Sphagnum moss (D8) (LRR T,U)
Field Observations:		
Surface Water Present? Yes X No	Depth (inches): 2	

Water Table Present? Saturation Present?

Depth (inches): Wetland Hydrology Present? Yes X No.

(includes capillary fringe)

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

No

No

Х

Х

Yes

Yes

Remarks:

Standing water in the soil pit location; wetland hydrology present



Depth (inches):

Sampling Point: WL-D-WET

	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksh	eet:		
Tree Stratum				Number of Dominant Spe That Are OBL, FACW, or		1	(4
Shrub Stratum							
Herb Stratum (Plot size: 6 Ft)				Total Number of Dominant Species Across all Strata:		1	(
Phragmites australis	100	Y	FACW			•	_ (•
Vine Stratum	100	=Total Cover		Percent of Dominant Spec That Are OBL, FACW, or I		100.0%	(/
				Prevalence Index Works	neet:		
				Total % Cover of:		iply by:	
				OBL species 0	x 1 =		
				FACW species 100			
				FAC species 0	x 3 =		
				FACU species 0	x 4 =		
				UPL species 0	x 5 =	0	
				Column Totals: 100) (A)	200	
				Prevalence Index =	B/A=	2.00	
				Hydrophytic Vegetation Ir	dicators:		
				1 - Rapid Test for Hyd		egetation	
				X 2 - Dominance Test >			
				X 3 - Prevalence Index ≤			
				Problematic Hydrophy Indicators of hydric soil and w	-		
				be present, unless disturbed of			
				Definitions of Vegetation S			
				Tree – Woody plants, exclud approximately 20 ft (6 m) or (7.6 cm) or larger in diameter	more in he	eight and	
				Sapling – Woody plants, exc approximately 20 ft (6 m) or than 3 in. (7.6 cm) DBH.			
				Shrub – Woody plants, exclu approximately 3 to 20 ft (1 to			
				Herb – All herbaceous (non- herbaceous vines, regardles plants, except woody vines, 3 ft (1 m) in height.	s of size. I	ncludes \	wo
				Woody vine – All woody vine	es, regardl	ess of he	igł
				Hydrophytic Vegetation Present?	Yes X	No	
marks: (Include photo numbers here or on a separate shee	t.)						
ydrophytic vegetation present							



	iption: (Des	cribe to the Matrix	depth nee	eded to document		licator or Features	confirm	the absence of Indicators.)	
Depth (inches)	Color	(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	М	SAND	Fibrous muck; 70% of particles masked with organic
¹ Type: C=Con Hydric Soil I)=Depletion,	RM=Redu	Iced Martix, CS=Co				ains. ² Location: PL=Pore Lin Indicators for Problematic	
5 cm Muck Muck Prese 1 cm Muck Depleted B Thick Dark Coast Prair Sandy Muc Sandy Gley Sandy Red Stripped Mate	edon (A2) c (A3) Sulfide (A4) ayers (A5) dies (A6) (LRF y Mineral (A7) (ence (A8) (LRF (A9) (LRR P, T elow Dark Surf Surface (A12) ie Redox (A16) ky Mineral (S1) red Matrix (S4) ox (S5)	(LRR P, T, U) R U) T) face (A11)) (MLRA 150A) (LRR O, S)]]]]]]]]]]]]]]]]]]]	 Folyvalue Below C Thin Dark Surface Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfa Depleted Dark Surfa Depleted Dark Surfa Redox Depression Marl (F10) (LRR L Depleted Ochric (I Iron-Manganese M Umbric Surface (F Delta Ochric (F17 Reduced Vertic (F Piedmont Floodpl Anomalous Bright 	e (S9) (LR neral (F1) atrix (F2) F3) ace (F6) arface (F6) of (F6) F11) (MLR Masses (F F13) (LRR) (MLRA F18) (MLR ain Soils ((LRR O) (LRR O) (12) (LRR O (12) (LRR O (12) (LRR O (12) (LRR O (15)) (151) (151) (150A, 15 (19) (MLR/	, P, T) 0B) A 149A)	 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) ³ Indicators of hydrophytic hydrology must be prese unless disturbed or prob 	(F19) (LRR P, S, T) coils (F20) (TF12) (LRR T, U) vegetation and wetland ent,
Restrict Type: Depth (inch	ive Layer (i	if observed	d):					Hydric Soil Present?	Yes X No
Remarks: Hydric soils pre	esent								



Project/Site: Orsted			City/County:	Ocean County	Sampling Date: 5/7/2020
Applicant/Owner: Ocean Wir	nd - Holtec Proper	y		State:	NJ Sampling Point: WL-E-UPL
Investigators: Stephen Seyn	nour	Jaclyn Chap	man	Section, Township	, Range S T Lacey R
Landform (hillslope, terrace, etc.)	: Road si	de	Local Relief	(concave, convex, no	one): Concave Slope(%) 5
Subregion (LRRor MLRA): LRF	R T	Lat: 39.8	08934	Long: -74.19869	6 Datum: WGS 1984
Soil Map Unit Name: Psamm	ents, 0-2% slope			NWI	Classification: None
Are climatic / hydrologic condition	ns on the site typic	al for this time	e of year? Yes X	No (If	No, explain in Remarks)
Are Vegetation, Soil	_, Hydrology	_, significant	ly disturbed?	Are "Normal Circur	nstances" present? Yes X No
Are Vegetation, Soil	_, Hydrology	, naturally p	problematic?	(If needed, explai	n any answers in Remarks.)
SUMMARY OF FINDING	S - Attach a si	te man sho	owing sampling p	oint locations t	ansects, important features, etc.
		-	<u>owing ouriphing p</u>		
Hydrophytic Vegetation Presen	t? Yes	No X	Is the Sampled Ar	02	
Hydric Soil Present?	Yes	No X	within a Wetland?		es No X
Wetland Hydrology Present?	Yes	No X			
Remarks: Area is not a wetland due to no	presence of hydro	phytic vegetat	ion, hydric soils, and we	etland hydrology	
HYDROLOGY					
Wetland Hydrology Indicators				Seco	ondary Indicators (minimum of two required)
Primary Indicators (minimum of	one is required: cl	neck all that ar	(ylac		
- · · ·	, ,	look an that a	1.37		Surface Soil Cracks (B6)
Surface Water (A1)	, ,		⁻ auna (B13)		Sparsely Vegetated Concave Surface (B8)
Surface Water (A1) High Water Table (A2)		Aquatic F			Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10)
Surface Water (A1)		Aquatic F	Fauna (B13)		Sparsely Vegetated Concave Surface (B8)

Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Ima Water-Stained Leaves (B9)	ıgery (B7)	Presence of Reduced Iron (Presence of Reduced Iron (Recent Iron Reduction in Til Thin Muck Surface (C7) Other (Explain in Remarks)	Crayfish Burrows (C8)
Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (stream ga	Yes N Yes N Yes N uge, monitoring well,	lo X Depth (inches):	Wetland Hydrology Present? Yes No_X_
Remarks: No wetland hydrology present			



Sampling Point: WL-E-UPL

		<u>Absolute</u> % Cover	Dominant Species	Indicator Status	Dominance Test Work	sheet:			
Tree Stratum	(Plot size: 30 Ft)				Number of Dominant S			2	(A
Quercus palustris		30	Y	FACW	That Are OBL, FACW,	or FAC:		Z	_ (/
Pinus resinosa		20	- <u>Y</u>	FACU	Total Number of Domin	ant			
Prunus virginiana		20	Y	FACU	Species Across all Stra	ta:		9	(B
Sassafras albidum		20	Y	FACU	Dereent of Deminent St				
Acer rubrum		10	Ν	FAC	Percent of Dominant Sp That Are OBL, FACW,			22.2%	(A
		100	=Total Cover		Dreveler ee Indew Wee				
Shrub Stratum	(Plot size: 30 Ft)				Prevalence Index Wor				
Clethra alnifolia	(FIOUSIZE: <u>3011</u>)	30	Y	FACW	Total % Cover of:		Multip x 1 =	oly by: 0	
		30	=Total Cover		OBL species				
Lauk Chuatuma					FACW species	60 3	x 2 =	120	
Herb Stratum	(Plot size: <u>6 Ft</u>)				FAC species	10	x 3 =	30	
Fragaria virginiana			Y	FACU	FACU species	116	x 4 =	464	
Artemisia annua		10	Y	FACU	UPL species	0 >	x 5 =	0	
Juniperus virginian	a	10	Y	FACU		186 (/	۹)	614	(E
		40	=Total Cover		Column Totals:	100 (/	יי	014	(L
Vine Stratum	(Plot size: <u>_30 Ft</u>)				Prevalence Index	= B/A=		3.30	
Celastrus orbiculat	us	15	Y	FACU					
Parthenocissus qu	inquefolia	1	Ν	FACU	Hydrophytic Vegetation				
		16	=Total Cover		1 - Rapid Test for H	lydrophyt	ic Veg	etation	
					2 - Dominance Tes	t > 50%			
					3 - Prevalence Inde	ex ≤ 3.0			
					Duchlans stie Ubrehen			··· (F.	
					Problematic Hydrop	onytic ve	getatio	n (Ex	Jair
					Indicators of hydric soil an be present, unless disturb				
					Definitions of Vegetatio	on Strata:	:		
					Tree – Woody plants, exe approximately 20 ft (6 m) (7.6 cm) or larger in diam	or more	in heig	ght and	3 in)B⊦
					Sapling – Woody plants, approximately 20 ft (6 m) than 3 in. (7.6 cm) DBH.				
					Shrub – Woody plants, e approximately 3 to 20 ft (
					Herb – All herbaceous (n herbaceous vines, regard plants, except woody vine 3 ft (1 m) in height.	lless of si	ize. In	cludes	NOO
					Woody vine – All woody	vines, reg	ardles	s of he	ight
					Hydrophytic Vegetation Present?	Yes		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.



• •	escribe to the Matrix	depth ne	eded to document		icator or Features	confirm	the absence of Indicators.)	
Depth (inches) Co	olor (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 7 10YR	3/2	100			- 71 -		FINE SANDY LOAM	
7 to 20 10YR	6/8	100					COARSE SILTY SAND	10% rounded quartz pebbles
¹ Type: C=Concentration	n, D=Depletion,	RM=Red	uced Martix, CS=Cc	overed or	Coated S	and Gra	ains. ² Location: PL=Pore Lini	ng, M=Matrix.
Hydric Soil Indicators Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) (I 5 cm Mucky Mineral (A Muck Presence (A8) (I 1 cm Muck (A9) (LRR Depleted Below Dark Surface (A Coast Prairie Redox (A Sandy Mucky Mineral Sandy Gleyed Matrix (.RR P, T, U) .7) (LRR P, T, U) .RR U) P, T) Surface (A11) 12) .16) (MLRA 150A (S1) (LRR O, S))	 Polyvalue Below S Thin Dark Surface Loamy Mucky Min Loamy Gleyed Mati Depleted Matrix (F Redox Dark Surfa Depleted Dark Surfa Redox Depression Marl (F10) (LRR U Depleted Ochric (F Iron-Manganese M Umbric Surface (F Delta Ochric (F17) 	(S9) (LR eral (F1) (trix (F2) 3) ce (F6) rface (F7) ns (F8) J) F11) (MLF Aasses (F 13) (LRR	R S, T, U) LRR O) RA 151) 12) (LRR O P, T, U)		Indicators for Problematic 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outsic Piedmont Floodplain Soils (F Anomalous Bright Loamy Sc (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (Other (Explain in Remarks) ³ Indicators of hydrophytic v hydrology must be preser unless disturbed or proble	de MLRA 150A,B) F19) (LRR P, S, T) oils (F20) (TF12) (LRR T, U) vegetation and wetland nt,
Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LR	R P, S, T, U)		Reduced Vertic (F Piedmont Floodpla Anomalous Bright	ain Soils (F19) (MLRA	(149A))A, 153C, 153D)	
Restrictive Laye Type: Depth (inches): Remarks:	r (if observe	d):					Hydric Soil Present?	Yes No _ X
No hydric soils present ba	sed on soils not n	neeting any	of the hydric soil indica	ators				

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, Ran	ge_S T Lacey R
Landform (hillslope, terrace, etc.): Level	Local Relief (c	oncave, convex, none):	None Slope(%) 0
Subregion (LRRor MLRA): LRR T	at: 39.808934	Long: -74.498696	Datum: WGS 1984
Soil Map Unit Name: Manahawkin Muck, 0-2% slop	e	NWI Classi	fication: PFO4Cg
Are climatic / hydrologic conditions on the site typical for	r this time of year? Yes X	No (If No, e	xplain in Remarks)
Are Vegetation, Soil, Hydrology, s	ignificantly disturbed?	Are "Normal Circumstand	ces" present? Yes X No
Are Vegetation, Soil, Hydrology, n	aturally problematic?	(If needed, explain any	answers in Remarks.)
SUMMARY OF FINDINGS - Attach a site n Hydrophytic Vegetation Present? Yes X No Hydric Soil Present? Yes X No Wetland Hydrology Present? Yes X No Remarks: Wetland is an Atlantic white cedar swamp with a few reference Yes Yes	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)		ce Soil Cracks (B6)

Primary Indicators (minimum c	of one is r	equir	Surface 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 Imater ✓ Water-Stained Leaves (B9)	agery (B7)			Hy Hy Ox Pre	uatic Fauna (B13) arl Deposits (B15) (LRI drogen Sulfide Odor (C idized Rhizospheres a esence of Reduced Iro ecent Iron Reduction in in Muck Surface (C7) her (Explain in Remark	C1) long Living Roots (C3 n (C4) Tilled Soils (C6)	 Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (C2) 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) 			
Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe)	Yes Yes Yes	X X	No No No	_X	Depth (inches): Depth (inches): Depth (inches):	To Surface To Surface	Wetland Hydrology Present? Yes X No			
Describe Recorded Data (stream ga	uge, monit	oring \	vell, ae	rial photo	os, previous inspection	s), if available:				
Remarks: Very shallow (<10") root zone for Atl	antic white	cedar	s. Wet	land hydr	ology present based o	n a high water table, s	aturation, and water-stained leaves.			



Sampling Point: WL-E-WET

	<u>Absolute</u> <u>% Cover</u>	Dominant Species	Indicator Status	Dominance Test W	orksheet:	:		
Tree Stratum (Plot size: 30 Ft)				Number of Domina			e	(^)
Chamaecyparis thyoides	80	Y	OBL	That Are OBL, FAC	CW, or FA	C:	6	(A)
Acer rubrum	10	N	FAC	Total Number of Do	minant			
	90	=Total Cover		Species Across all S			6	(B)
<u>Shrub Stratum</u> (Plot size: <u>30 Ft</u>) Clethra alnifolia	20	Y	FACW	Percent of Dominan That Are OBL, FAC		:	100.0%	(A/E
Vaccinium corymbosum	20	Y	FACW	Prevalence Index W	Vorkshee	t:		-
Viburnum dentatum	10	Y	FAC	Total % Cover o	of:	Multi	iply by:	
	50	=Total Cover		OBL species	80	x 1 =	80	
Herb Stratum (Plot size: 6 Ft)				FACW species	80	x 2 =	160	
Osmundastrum cinnamomeum	40	Y	FACW		40	x 3 =	120	
-	40	=Total Cover		FAC species	0	x 4 =	0	
Vine Stratum (Plot size: 20 Et)				FACU species	0	x 4 -	0	
(Plot size: <u>30 Ft</u>) Toxicodendron radicans	20	Y	FAC	UPL species				
	20	=Total Cover		Column Totals:	200	(A)	360	(B)
				Prevalence In	dex = B/A	=	1.80	
				Hydrophytic Vegeta	tion Indic	ators:		
				1 - Rapid Test f			aetation	
				X 2 - Dominance	, ,	,	gennen	
				X 3 - Prevalence I)		
				Problematic Hyd	drophytic \	/egetati	ion (Exp	olain)
				Indicators of hydric soi be present, unless dis				
				Definitions of Vegeta	ation Stra	ta:		
				Tree – Woody plants, approximately 20 ft (6 (7.6 cm) or larger in d	m) or mo	re in he	ight and	
				Sapling – Woody plan approximately 20 ft (6 than 3 in. (7.6 cm) DB	m) or mo			
				Shrub – Woody plants approximately 3 to 20				
				Herb – All herbaceous herbaceous vines, reg plants, except woody 3 ft (1 m) in height.	gardless of	f size. Ir	ncludes \	wood
				Woody vine – All woo	dy vines, r	egardle	ess of he	ight.
	et)			Hydrophytic Vegetation Presen	nt? 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.



Project/Site: Orsted	City/County: Oc	cean County Sampling Date: 8/10/2020
Applicant/Owner: Ocean Wind - Forked River, LL	0	State: NJ Sampling Point: WL-F-UP
Investigators: Zak Lehmann J	aclyn Chapman Se	ection, Township, Range S T Lacey R
Landform (hillslope, terrace, etc.): Level	Local Relief (cond	cave, convex, none): None Slope(%) 0
Subregion (LRRor MLRA): LRR T	Lat: 39.811434 Lo	ng: -74.209815 Datum: WGS 1984
Soil Map Unit Name: Lakehurst sand, 0 to 5 perce	ent slopes	NWI Classification: Not mapped
Are climatic / hydrologic conditions on the site typical	for this time of year? Yes X N	No (If No, explain in Remarks)
Are Vegetation, Soil, Hydrology,	significantly disturbed? Are	e "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, Hydrology,	naturally problematic? (It	f needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach a site	map showing sampling point	locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X N	o Is the Sampled Area	
Hydric Soil Present? Yes N	• X within a Wetland?	Yes No X
Wetland Hydrology Present? YesN	o <u>X</u>	
Remarks:		- Charles and a sector of baseline to me
Area does contain hydrophytic vegetation; however,	this area is not a wetland based on lack	of hydric solls and wetland hydrology
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; chec	k 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 U)	Drainage Patterns (B10)

 Algal Mater Value (PL) 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) 	agery (B7)		Hyd Oxio	n Deposits (B15) (LRR U) Irogen Sulfide Odor (C1) dized Rhizospheres along Living Roots (C sence of Reduced Iron (C4) sent Iron Reduction in Tilled Soils (C6) n Muck Surface (C7) er (Explain in Remarks)	 Moss Trim Lines (B16) Dry-Season Water Table (C2) 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)
Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (stream g	Yes Yes Yes auge, monitorin	No No	X X X al photos	Depth (inches): Depth (inches): Depth (inches): s, previous inspections), if available:	Wetland Hydrology Present? Yes No_X
Remarks: No wetland hydrology present					



Sampling Point: WL-F-UP

	<u>Absolute</u> % Cover	Dominant Species	Indicator Status	Dominance Test Workshee	t:		
Tree Stratum (Plot size: 30 Ft)	<u>,,,,,,,,</u>	<u></u>	<u></u>	Number of Dominant Specie		0	
Pinus rigida	80	Y	FACU	That Are OBL, FACW, or FA	NC:	2	(
	80	=Total Cover		Total Number of Dominant			
Shrub Stratum (Plot size: 30 Ft)				Species Across all Strata:		3	(E
Myrica pensylvanica	40	Y	FAC	Percent of Dominant Species		66.7%	(A
Pinus rigida	5	Ν	FACU	That Are OBL, FACW, or FA	C:		- (
	45	=Total Cover		Prevalence Index Workshe	et:		
Herb Stratum (Plot size: <u>6 Ft</u>)				Total % Cover of:		oly by:	
Panicum dichotomiflorum	100	Y	FACW	OBL species 0	x 1 =	0	
	100	=Total Cover		FACW species 100	x 2 =	200	
/ine Stratum				FAC species 40	x 3 =	120	
				FACU species 85	x 4 =	340	
				UPL species 0	x 5 =	0	
				Column Totals: 225	(A)	660	
				Prevalence Index = B/A	<i>l</i> =	2.93	
				Hydrophytic Vegetation Indi	cators:		
				1 - Rapid Test for Hydror	ohytic Ve	getation	
				X 2 - Dominance Test > 50	%		
				X 3 - Prevalence Index ≤ 3	0		
				Problematic Hydrophytic	-		
				Indicators of hydric soil and wetla be present, unless disturbed or p			
				Definitions of Vegetation Str	ata:		
				Tree – Woody plants, excludin approximately 20 ft (6 m) or mo (7.6 cm) or larger in diameter a	ore in heig	ght and	3 i DB
				Sapling – Woody plants, exclu approximately 20 ft (6 m) or mo than 3 in. (7.6 cm) DBH.			
				Shrub – Woody plants, excludi approximately 3 to 20 ft (1 to 6	ng woody m) in hei	v vines, ght.	
				Herb – All herbaceous (non-wo herbaceous vines, regardless o plants, except woody vines, les 3 ft (1 m) in height.	of size. In	cludes \	wo
				Woody vine – All woody vines,	regardles	ss of he	igł
				Hydrophytic Vegetation Present? Ye	s X	No	

Hydrophytic vegetation presented based on dominance test and prevalence index

Profile Desc	ription: (Des		e depth ne	eded to documen			confirm	the absence of Indicators.)	
Depth		Matrix	<u> </u>			-eatures		— <u> </u>	— .
(inches)		(moist)	%	Color (moist)	%	Type ¹		Texture	Remarks
0 to 4	10YR	3/1	50	10YR7/2	50	C	M	SAND	
4 to 20	10YR	6/6	100					SAND	
¹ Type: C=Co	ncentration, [D=Depletion	, RM=Red	uced Martix, CS=Co	overed or	Coated S	Sand Gra	ains. ² Location: PL=Pore Lining,	M=Matrix.
Stratified L Grganic B 5 cm Muck Muck Pres 1 cm Muck	A1) bedon (A2)	(LRR P, T, U) R U) T)		Polyvalue Below 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	e (S9) (LR heral (F1) (atrix (F2) =3) here (F6) hrface (F7) hs (F8) J)	(LRR O)	Τ, U)	Indicators for Problematic Hyd 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outside M Piedmont Floodplain Soils (F19) Anomalous Bright Loamy Soils (I (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (TF1: Other (Explain in Remarks)	ILRA 150A,B) (LRR P, S, T) F20) 2) (LRR T, U)
Thick Dark Coast Prai Sandy Mu Sandy Gle Sandy Rec Stripped M	k Surface (A12) irie Redox (A16 cky Mineral (S1 eyed Matrix (S4) dox (S5)) (MLRA 150 <i>A</i>) (LRR O, S) P, S, T, U)		Depleted Ochric (Iron-Manganese N Umbric Surface (F Delta Ochric (F17 Reduced Vertic (F Piedmont Floodpl Anomalous Bright	Masses (F 513) (LRR) (MLRA 1 518) (MLR ain Soils (12) (LRR C P, T, U) 51) A 150A, 15 F19) (MLR.	0B) A 149A)	³ Indicators of hydrophytic vege hydrology must be present, unless disturbed or problemat 0A, 153C, 153D)	
Type: Depth (inc								Hydric Soil Present? Ye	s No X
Remarks: No hydric soil	indicators prese	ent							

Project/Site: Orsted	City/County:	Ocean County	Sampling Date: 5/7/2020
Applicant/Owner: Ocean Wind - Forked River Pro	perty	State: NJ	Sampling Point: WL-F-WET
nvestigators: Stephen Seymour J	aclyn Chapman	Section, Township, Ran	ge S T Lacey R
andform (hillslope, terrace, etc.): Hillslope	Local Relief	(concave, 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% slope	3	NWI Classi	fication: Not mapped
Are climatic / hydrologic conditions on the site typical	for this time of year? Yes X	No (If No, e	explain in Remarks)
re Vegetation, Soil, Hydrology,	significantly disturbed?	Are "Normal Circumstan	ces" present? Yes X No
re Vegetation, Soil, Hydrology,	naturally problematic?	(If needed, explain any	answers in Remarks)
SUMMARY OF FINDINGS - Attach a site	man chowing campling p		,
Hydric Soil Present? Yes X N Wetland Hydrology Present? Yes X N Remarks: Narrow reed grass-dominated wetland. Source is a compared wetland. Source is a compared wetland.	0	Yes	X No
IYDROLOGY			
Wetland Hydrology Indicators:			/ Indicators (minimum of two required)
Primary Indicators (minimum of one is required; chec Surface Water (A1) High Water Table (A2)	k all that apply)		ice Soil Cracks (B6) sely Vegetated Concave Surface (B8)

 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) 	agery (B7)		Ox Ox Pre Re Th	drogen Sulfide Odor (C1) idized Rhizospheres along Livi esence of Reduced Iron (C4) cent Iron Reduction in Tilled So in Muck Surface (C7) her (Explain in Remarks)		 Moss Trim Lines (B16) Dry-Season Water Table (C2) 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)
Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (stream ga	Yes Yes Yes	No No	X X X ial photo	Depth (inches): Depth (inches): Depth (inches): s, previous inspections), if ava	ilable:	Wetland Hydrology Present? Yes <u>X</u> No
Remarks: Adjacent uplands are early success water-stained leaves.	ional red ceda	r and pitch	pines ~{	5-15' tall. Saturation at approxir	mately 15 inche	s below the ground surface. Wetland hydrology present based on



Sampling Point: WL-F-WET

	<u>Absolute</u> <u>% Cover</u>	Dominant Species	Indicator Status	Dominance Test Worksheet:		
Tree Stratum				Number of Dominant Species That Are OBL, FACW, or FAC	. 2	(A)
Shrub Stratum (Plot size: 30 Ft)					•	_ ` '
Juniperus virginiana	20	Y	FACU	Total Number of Dominant Species Across all Strata:	4	(P)
Pinus resinosa	20	Y	FACU		4	(B)
Herb Stratum (Plot size: 6 Ft)	40	=Total Cover		Percent of Dominant Species That Are OBL, FACW, or FAC:	50.0%	(A/E
Herb Stratum (Plot size: <u>6 Ft</u>) Panicum dichotomiflorum	60	Y	FACW	Prevalence Index Worksheet:		
Phragmites australis		- <u> </u>	FACW	Total % Cover of:	Multiply by:	
5	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	
					(A) 340	(B)
				Prevalence Index = B/A=	2.62	
				Hydrophytic Vegetation Indica	ators:	
				1 - Rapid Test for Hydrophy	ytic Vegetation	
				2 - Dominance Test > 50%		
				X 3 - Prevalence Index \leq 3.0		
				Problematic Hydrophytic V	egetation (Exp	plain)
				Indicators of hydric soil and wetland be present, unless disturbed or prol		
				Definitions of Vegetation Strata	a:	
				Tree – Woody plants, excluding v approximately 20 ft (6 m) or more (7.6 cm) or larger in diameter at b	e in height and	3 in. DBH)
				Sapling – Woody plants, excludir approximately 20 ft (6 m) or more than 3 in. (7.6 cm) DBH.		
				Shrub – Woody plants, excluding approximately 3 to 20 ft (1 to 6 m		
				Herb – All herbaceous (non-wood herbaceous vines, regardless of plants, except woody vines, less 3 ft (1 m) in height.	size. Includes v	wood
				Woody vine – All woody vines, re	egardless of he	ight.
				Hydrophytic Vegetation Present? Yes	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.

	ription: (Des		e depth n	eeded to documen			confirm	the absence of Indicators.)	
Depth (inches)	Color	Matrix (moist)	%	Color (moist)	Redox %	Features Type ¹	Loc 2	Texture	Remarks
0 to 4	10YR	4/1				Турс		FINE SANDY LOAM	
4 to 11	10YR	5/2	<u>100</u> 70	10YR 5/6	30	С	M	FINE SANDY LOAM	
11 to 20	10YR	3/2	100	1011(0/0				FINE SANDY LOAM	
				duced Martix, CS=C	overed o	r Coated S	Band Gra	ains. ² Location: PL=Pore Linin	g, M=Matrix.
5 cm Muck Muck Prese 1 cm Muck Depleted B Thick Dark Coast Prain Sandy Muc Sandy Gley Sandy Red Stripped M	1) edon (A2) c (A3) Sulfide (A4) ayers (A5) odies (A6) (LRF y Mineral (A7) (ence (A8) (LRF (A9) (LRR P, 7) below Dark Surf Surface (A12) rie Redox (A16) sky Mineral (S1) yed Matrix (S4) lox (S5)	(LRR P, T, U) R U) F) iace (A11)) (MLRA 150A) (LRR O, S)		 Polyvalue Below Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Matrix (I Redox Dark Surface Depleted Matrix (I Redox Depressio Marl (F10) (LRR I Depleted Ochric (I Iron-Manganese I Umbric Surface (I Delta Ochric (F17 Reduced Vertic (F Piedmont Floodpi Anomalous Brigh 	e (S9) (LR neral (F1) atrix (F2) F3) ace (F6) urface (F7) ns (F8) U) (F11) (MLR F13) (LRR 7) (MLRA F18) (MLR Iain Soils ((LRR O) (LRR O) (12) (LRR C) (12) (LRR C (12) (LRR C (12) (LRR C) (15) (15) (15) (15) (15) (15) (15) (11) (MLR)	, P, T) 0B) A 149A)	Indicators for Problematic H 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outside Piedmont Floodplain Soils (F ² 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	e MLRA 150A,B) 19) (LRR P, S, T) Is (F20) "F12) (LRR T, U) egetation and wetland
Type: Depth (inch Remarks:			· 	ted Matrix (F3) indicato	r			Hydric Soil Present?	Yes X No

Project/Site: Orsted	City/County:	Ocean County Sampling Date: 8/11/2020
Applicant/Owner: Ocean Wind - Forked River, LL	_C	State: NJ Sampling Point: WL-G1-UP
Investigators: Zak Lehmann	Jaclyn Chapman	Section, Township, Range S T Lacey R
Landform (hillslope, terrace, etc.): None	Local Relief (c	concave, convex, none): None Slope(%) 0
Subregion (LRRor MLRA): LRR T	Lat: 39.811379	Long: -74.212809 Datum: WGS 1984
Soil Map Unit Name: Lakehurst Sand, 0-5% slop	es	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, 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	e map showing sampling poi	nt locations, transects, important features, etc.
Watland Lludralagy (Dresent?)	No Is the Sampled Area within a Wetland?	Yes No X
	e index alone; however, area is not a v	wetland based on lack of hydric soils and wetland hydrology
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; che	ck all that apply)	Surface Soil Cracks (B6)
Surface Water (A1)	Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Saturation (A3)	Marl Deposits (B15) (LRR U)	Drainage Patterns (B10) Moss Trim Lines (B16)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Ro	Crayfish Burrows (C8)
Drift Deposits (B3)	Presence of Reduced Iron (C4)	Caturation Visible on Asriel Imag (CO)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C	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 No X
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aeri	al photos, previous inspections), if available	
Remarks:		
No wetland hydrology present		



VE

			Absolute % Cover	<u>Dominant</u> Species	Indicator Status	Dominance Test Wor	rksheet:			
Tree Stratum	(Diot circy 20 Ft	1	70 COver	opecies	SIGIUS	Number of Dominant	Species			
Juniperus virgini	(Plot size: <u>30 Ft</u>)	20	Y	FACU	That Are OBL, FACW	, or FAC):	1	_ (
Prunus serotina			5	- <u> </u>	FACU	Total Number of Domi	nant			
			25	=Total Cover		Species Across all Str	ata:		4	(1
Shrub Stratum	(Plot size: 30 Ft	1				Percent of Dominant S	Snecies			-
Rubus idaeus)	20	Y	FACU	That Are OBL, FACW,			25.0%	(/
			20	=Total Cover		Prevalence Index Wo	orksheet	:		
lerb Stratum	(Plot size: 6 Ft)				Total % Cover of:			ply by:	
Panicum dichoto)	80	Y	FACW	OBL species	0	x 1 =	0	
Eupatorium perf			10	N	FACW	FACW species	100	x 2 =	200	
Phragmites aust			10	N	FACW		0	x 3 =	0	
			100	=Total Cover		FAC species	45	x 4 =	180	
ine Stratum						FACU species	45 0	x 4 – x 5 =	0	
						UPL species				
						Column Totals:	145	(A)	380	
						Prevalence Inde	x = B/A=	-	2.62	
						Hydrophytic Vegetatio	on Indica	ators:		
						1 - Rapid Test for	Hydroph	ytic Ve	getation	
						2 - Dominance Te	st > 50%)		
						X 3 - Prevalence Ind	lex ≤ 3.0			
						Problematic Hydro			on (Evi	วไร
								U		<i>,</i> 1d
						Indicators of hydric soil a be present, unless distur				
						Definitions of Vegetati	on Strat	a:		
						Tree – Woody plants, ex	kcluding	woody	vines,	
						approximately 20 ft (6 m (7.6 cm) or larger in diar	i) or more	e in heig	ght and	
						Sapling – Woody plants approximately 20 ft (6 m than 3 in. (7.6 cm) DBH) or more			
						Shrub – Woody plants, o approximately 3 to 20 ft				
						Herb – All herbaceous (herbaceous vines, regar plants, except woody vir 3 ft (1 m) in height.	rdless of	size. In	cludes v	NO
						Woody vine – All woody	vines, re	egardles	ss of hei	igł
						Hydrophytic Vegetation Present?				



Profile Desci	ription: (Des		depth ne	eded to documen			confirm	the absence of Indicators.)	
Depth		Matrix	<u> </u>			Features			_
(inches)		(moist)	%	Color (moist)	%	Type ¹	Loc 2	Texture	Remarks
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	C	Μ	SAND	
¹ Type: C=Cor	ncentration, D	=Depletion,	RM=Redu	uced Martix, CS=Co	overed o	or Coated S	Sand Gra	ains. ² Location: PL=Pore Li	ning, M=Matrix.
Stratified L Grganic Bc 5 cm Muck Muck Pres 1 cm Muck Depleted E Thick Dark Coast Prai Sandy Muc	1) edon (A2) c (A3) Sulfide (A4)	(LRR P, T, U) R U) T) ace (A11)) (MLRA 150A) (LRR O, S))	 Polyvalue Below S Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Matrix (f Redox Dark Surface Depleted Matrix (f Redox Depression Marl (F10) (LRR I Depleted Ochric (Iron-Manganese N Umbric Surface (f Delta Ochric (F17 	e (S9) (LF neral (F1) atrix (F2) F3) ace (F6) urface (F7 ns (F8) J) F11) (MLI Masses (F F13) (LRF	RR S, T, U) (LRR O)) RA 151) €12) (LRR C & P, T, U)		Indicators for Problemati	side MLRA 150A,B) (F19) (LRR P, S, T) Soils (F20) e (TF12) (LRR T, U) s) ic vegetation and wetland sent,
Sandy Gle				Reduced Vertic (F17			0B)		
Stripped M	atrix (S6)			Piedmont Floodpl					
Dark Surfa	ce (S7) (LRR P	, S, T, U)		Anomalous Bright			-	9A, 153C, 153D)	
Type: Depth (incl	tive Layer (i	fobserve	d):					Hydric Soil Present?	Yes <u>No X</u>
Remarks: No hydric soil i	indicators prese	ent							

Project/Site:	Orsted			City/Co	unty:	Ocean	County		Samp	ling Date:	5/7/2020	
Applicant/Owner:	Ocean Wind - Fo	rked River	Property				State:	NJ	Samp	ling Point:	WL-G-W	ET
Investigators:	Stephen Seymour		Jaclyn Cha	pman		Section	n, Townsl	nip, Rang	ge S	T Lac	ey R	
Landform (hillslop	pe, terrace, etc.):	None			Local Relie	ef (concave	, convex,	none):	None		Slope(%) 0
Subregion (LRRc	or MLRA): LRR T		Lat: 39.8	311349		Long:	-74.213	354		Datum	n: WGS 198	4
Soil Map Unit Na	me: Lakehurst sar	d 0-5% slo	pes				NW	I Classif	ication:	Not mapp	ed	
Are climatic / hyd	Irologic conditions on t	ne site typi	cal for this tim	e of year?	Yes	X No		(If No, e	xplain in	Remarks)		
Are Vegetation	, Soil, Hy	drology	, significan	tly disturbe	d?	Are "No	ormal Circ	umstanc	es" pres	ent? Yes	s X	No
Are Vegetation	, Soil, Hy	drology	, naturally	problematic	?	(If nee	eded, exp	lain any	answers	in Remark	s.)	
Hydrophytic Ve Hydric Soil Pres Wetland Hydrol Remarks:	sent?	Yes X Yes X Yes X	No No No	ls the withir	Sampled A	rea ?		Yes	X	No		·
HYDROLOGY										rs (minimu		and an all

wetland Hydrology Indicato	rs:						Secondary indicators (minimum or two required)
Primary Indicators (minimum	of one is	requir	ed; ch	eck all t	hat apply)		Surface Soil Cracks (B6)
Surface Water (A1) ✓ High Water Table (A2) ✓ Saturation (A3) ✓ Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)				Ma Ma Hy Ox Ox Pr	uatic Fauna (B13) arl Deposits (B15) (LRF drogen Sulfide Odor (C idized Rhizospheres al esence of Reduced Iror ecent Iron Reduction in	c1) ong Living Roots (C3) n (C4)	 Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16) Drainage Mictae Table (C2)
Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Im ✓ Water-Stained Leaves (B9)	agery (B7)				iin Muck Surface (C7) her (Explain in Remark	s)	Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Sphagnum moss (D8) (LRR T,U)
Field Observations:							
Surface Water Present?	Yes		No	Х	Depth (inches):		
Water Table Present?	Yes	Χ	No		Depth (inches):	3	
Saturation Present?	Yes	Χ	No		Depth (inches):	To surface	Wetland Hydrology Present? Yes X No
(includes capillary fringe)							
Describe Recorded Data (stream ga	iuge, moni	toring	well, ae	rial photo	os, previous inspections	s), it available:	
Remarks: Extensive areas with shallow (1-4" i red cedar and pitch pine.	nundation)	in the	three p	olygons t	hat comprise Wetland	G. Block 1001, Lot 4.0	06 is level. Surrounding uplands in early successional stage ~6-12 ft



Sampling Point: WL-G-WET

Trac Stratum	<u>Absolute</u> <u>% Cover</u>	<u>Dominant</u> Species	Indicator Status	Dominance Test Work Number of Dominant S				
Tree Stratum				That Are OBL, FACW,			2	(/
<u>Shrub Stratum</u> (Plot size: <u>30 Ft</u>) Juniperus virginiana	10	Y	FACU	Total Number of Domin	ant			
	10			Species Across all Stra	ita:		3	(E
Herb Stratum (Plot size: 6 Ft)		=Total Cover		Percent of Dominant Sp That Are OBL, FACW,			66.7%	(A
Panicum dichotomiflorum	40	Y	FACW	Prevalence Index Wo	rkshoot:			
Phragmites australis	30	Y	FACW	Total % Cover of:	Köneet.	Multip	ly by:	
line Otreture	70	=Total Cover		OBL species	0	x 1 =	0	
/ine Stratum				FACW species	70	x 2 =	140	
				FAC species	0	x 3 =	0	
				FACU species	10	x 4 =	40	
				UPL species	0	x 5 =	0	
				Column Totals:		A)	180	(
				Prevalence Index	c = B/A=		2.25	
				Hydrophytic Vegetatio	n Indicat	tors:		
				1 - Rapid Test for H			etation	
				X 2 - Dominance Tes			,	
				X 3 - Prevalence Inde	$x \ge 3.0$			
				Problematic Hydro	phytic Ve	egetatio	on (Exp	ola
				Indicators of hydric soil an be present, unless disturb				
				Definitions of Vegetation	on Strata	:		
				Tree – Woody plants, ex approximately 20 ft (6 m) (7.6 cm) or larger in diam	or more	in heig	ght and	
				Sapling – Woody plants, approximately 20 ft (6 m) than 3 in. (7.6 cm) DBH.				
				Shrub – Woody plants, e approximately 3 to 20 ft (
				Herb – All herbaceous (n herbaceous vines, regard plants, except woody vine 3 ft (1 m) in height.	dless of s	size. In	cludes v	vov
				Woody vine – All woody	vines, reg	gardles	s of he	gh
				Hydrophytic Vegetation Present?	Yes	x	No	
narks: (Include photo numbers here or on a separate shee drophytic vegetation present based on dominance of spec		L, FACW. or F	-AC greater	Vegetation Present?				ua



Depth Matrix Redox Features (inches) Color (moist) % Color (moist) % Type ¹ Loc ² Texture Remarks	• •	•	needed to documen			confirm	the absence of Indicators.)	
(incres) Color (molst) % Color (molst) % Type Loc 2 Texture Remarks			Color (moint)			1 00 2	Touturo	Demarka
	,,,,,,,	·	Color (moist)	%	Туре	LOC 2		
0 to 4 10YR 6/6 100 FINE SAND Wet fine sand			10VD 5/4	20		N.4		
<u>4 to 20 10TR 4/1 70 10TR 5/4 30 C M FINE SAND</u> Wet sity sand	<u>4 10 20</u> 10FR 47	1 70	101R 5/4		<u> </u>			
¹ Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.	¹ Type: C=Concentration, D=Depl	etion, RM=Re	duced Martix, CS=C	overed o	r Coated S	Sand Gra	ains. ² Location: PL=Pore L	ining, M=Matrix.
4 to 20 10YR 4 / 1 70 10YR 5/4 30 C M FINE SAND Wet silty sand	4 to 20 10YR 4 // 1Type: C=Concentration, D=Depl Hydric Soil Indicators: Histosol (A1) 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 Muck Presence (A8) (LRR U) 1 cm Muck (A9) (LRR P, T) Depleted Below Dark Surface (A12) Coast Prairie Redox (A16) (MLR/ Sandy Mucky Mineral (S1) (LRR F) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, I) Restrictive Layer (if obs Type: Depth (inches): Remarks:	1 70 etion, RM=Re J) , T, U) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1	educed Martix, CS=C Polyvalue Below Thin Dark Surfac Loamy Mucky Mii Loamy Gleyed M ✓ Depleted Matrix (Redox Dark Surfa Depleted Dark Surfa Redox Depressio Marl (F10) (LRR Depleted Ochric I Iron-Manganese Umbric Surface (Delta Ochric (F17 Reduced Vertic (I Piedmont Floodp Anomalous Brigh	overed o Surface (S e (S9) (LR neral (F1) atrix (F2) F3) ace (F6) urface (F7) ons (F8) U) (F11) (MLF Masses (F F13) (LRR 7) (MLRA 7 F18) (MLR Iain Soils (Lian Soils (r Coated S (LRR S, (IR S, T, U) (LRR O) (LRR O) (2) (LRR O) (2) (2) (2) (LRR O) (2) (2) (2) (2) (2) (2) (2) (2	Sand Gra T, U) , P, T) 0B) A 149A) MLRA 149	ains. ² Location: PL=Pore L Indicators for Problemat 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S Reduced Vertic (F18) (ou Piedmont Floodplain Soil: Anomalous Bright Loamy (MLRA 153B) Red Parent Material (TF2 Very Shallow Dark Surfac Other (Explain in Remark ³ Indicators of hydrophyd hydrology must be pre unless disturbed or pro	ining, M=Matrix. ic Hydric Soils: ³ tside MLRA 150A,B) s (F19) (LRR P, S, T) Soils (F20)) xe (TF12) (LRR T, U) s) ic vegetation and wetland sent, blematic.

Project/Site: Orsted	City/County: Oce	ean County Sampling Date: 8/10/2020
Applicant/Owner: Ocean Wind - JCP&L Property		State: NJ Sampling Point: WL-H-UP
	n Chapman Sec	ction, Township, Range S T Lacey R
Landform (hillslope, terrace, etc.): Level		ave, convex, none): None Slope(%) 0
Subregion (LRRor MLRA): LRR T Lat	: 39.810120 Lon	ng: -74.204154 Datum: WGS 1984
Soil Map Unit Name: Psamments, 0 - 2% slopes		NWI Classification: Not mapped
Are climatic / hydrologic conditions on the site typical for t	his time of year? Yes <u>X</u> N	lo (If No, explain in Remarks)
Are Vegetation, Soil, Hydrology, sig	nificantly disturbed? Are	"Normal Circumstances" present? Yes X No
Are Vegetation, Soil, Hydrology, nat	turally problematic? (If	needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach a site ma	ap showing sampling point l	ocations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X No		
	Is the Sampled Area	
Wetland Lludrology Dresent?	X within a Wetland?	Yes No X
Wetland Hydrology Present? YesNo		
hydrology HYDROLOGY		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check al	I that apply)	
		Surface Soil Cracks (B6)
	Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10)
	Marl Deposits (B15) (LRR U)	Moss Trim Lines (B16)
	Hydrogen Sulfide Odor (C1)	
	Oxidized Rhizospheres along Living Roots (Crayfish Burrows (C8)
	Presence of Reduced Iron (C4)	Saturation Visible on Aerial Imag.(C9)
	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)
	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	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 <u>No X</u>
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial pho	otos, previous inspections), if available:	
Remarks:		
No wetland hydrology present		



Sampling Point: WL-H-UP

	<u>Absolute</u> <u>% Cover</u>	Dominant Species	Indicator Status	Dominance Test Workshe			
ree Stratum (Plot size: <u>30 Ft</u>) Juniperus virginiana	20	Y	FACU	Number of Dominant Spec That Are OBL, FACW, or F		3	
Pinus rigida	20	- <u> </u>	FACU	Total Number of Dominant			
Acer rubrum		- <u> </u>	FAC	Species Across all Strata:		6	(
	50	=Total Cover		Percent of Dominant Specie		50.0%	- (1
hrub Stratum (Plot size: <u>30 Ft</u>)				That Are OBL, FACW, or F	AC:		-`
Viburnum dentatum	1	Y	FAC	Prevalence Index Worksh	eet:		
	1	=Total Cover		Total % Cover of:	Multi	ply by:	
erb Stratum (Plot size: 6 Ft)				OBL species 0	x 1 =	0	
Phragmites australis	60	Y	FACW	FACW species 60	x 2 =	120	
Rubus idaeus	20	Y	FACU	FAC species 16	x 3 =	48	
Polygonum achoreum	5	Ν	FAC	FACU species 60	x 4 =	240	
	85	=Total Cover		UPL species 0	x 5 =	0	
ne Stratum				Column Totals: 136	(A)	408	
				Prevalence Index = B	/A=	3.00	
				Hydrophytic Vegetation Ind		0.00	
				1 - Rapid Test for Hydro		netation	ı
				2 - Dominance Test > 5		5	
				X 3 - Prevalence Index ≤	3.0		
				Problematic Hydrophyti	c Vegetati	on (Ex	pla
				Indicators of hydric soil and we be present, unless disturbed or			
				Definitions of Vegetation Strata:			
				Tree – Woody plants, excludi approximately 20 ft (6 m) or n (7.6 cm) or larger in diameter	nore in hei	ght and	
				Sapling – Woody plants, excl approximately 20 ft (6 m) or n than 3 in. (7.6 cm) DBH.			
				Shrub – Woody plants, exclud approximately 3 to 20 ft (1 to			
				Herb – All herbaceous (non-w herbaceous vines, regardless plants, except woody vines, le 3 ft (1 m) in height.	of size. In	cludes	WO
				Woody vine – All woody vines	s, regardle	ss of he	igl
				Hydrophytic Vegetation Present? Y		No	



Profile Desc	ription: (Des	cribe to the	depth n	eeded to documen			confirm	the absence of Indicators.)	
Depth		Matrix				Features			
(inches)	Color	(moist)	%	Color (moist)	%	Type 1	Loc ²	Texture	Remarks
0 to 4	10YR	2/1	60	10YR6/2	40	С	Μ	SAND	
4 to 12	10YR	6/2	60	10YR2/1	40	С	М	SAND	
12 to 20	10YR	5/6	100					SAND	
¹ Type: C=Cor	ncentration, D	=Depletion,	RM=Rec	luced Martix, CS=Co	overed o	r Coated \$	Sand Gra	ains. ² Location: PL=Pore Lin	ing, M=Matrix.
Stratified L Grganic Bo 5 cm Muck Muck Pres 1 cm Muck Depleted E Thick Dark	A1) edon (A2) c (A3) Sulfide (A4) ayers (A5) odies (A6) (LRR cy Mineral (A7) (ence (A8) (LRR c (A9) (LRR P, T Below Dark Surf c Surface (A12)	LRR P, T, U) U)) ace (A11)	X	 Polyvalue Below S Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Mati Depleted Matrix (I Redox Dark Surfa Depleted Dark Surfa Depleted Dark Surfa Marl (F10) (LRR U Depleted Ochric (Iron-Manganese Mation 	e (S9) (LR heral (F1) hatrix (F2) =3) hce (F6) hrface (F7) hrs (F8) J) F11) (MLF	R S, T, U) (LRR O) RA 151)		Indicators for Problematic	de MLRA 150A,B) F19) (LRR P, S, T) oils (F20) (TF12) (LRR T, U) vegetation and wetland nt,
Sandy Muc Sandy Gle Sandy Rec Stripped M	latrix (S6) ice (S7) (LRR P	(LRR O, S)		Umbric Surface (F Delta Ochric (F17 Reduced Vertic (F Piedmont Floodpl Anomalous Bright	=13) (LRR) (MLRA 1 =18) (MLR ain Soils (P, T, U) 151) A 150A, 15 F19) (MLR.	0B) A 149A)	unless disturbed or probl 9A, 153C, 153D)	ematic.
Restrict Type:	tive Layer (i	f observe	d):					Urdrie Seil Present?	Vac Na V
Depth (incl	hes):							Hydric Soil Present?	Yes No X
Remarks: No hydric soil	indicators prese	nt							

Project/Site:	Orsted			City/Co	unty:		Ocean	n County		Sampli	ng Date:	8/10/20	20
Applicant/Owner:	Ocean Wind -	Holtec Prop	perty					State: N	IJ	Sampli	ng Point:	WL-H-V	VET
Investigators:	Zak Lehmann		Jac	lyn Chapman			Sectio	n, Township,	Range	e S	T Lac	ey R	
Landform (hillslop	pe, terrace, etc.):	Depr	ession		Local R	elief	(concave	e, convex, nor	ne): N	lone		Slope	e(%) 0
Subregion (LRR	or MLRA): LRR T		La	at: 39.810053			Long:	-74.204066			Datun	n: WGS 1	984
Soil Map Unit Na	me: Manahawk	in muck, 0-2	2 percen	t slopes, frequently	flooded			NWI CI	lassific	ation:	PEM1Fh		
Are climatic / hyc	Irologic conditions of	on the site ty	pical for	this time of year?	Yes	Х	No	(If N	No, exp	olain in F	Remarks)		
Are Vegetation	, Soil,	Hydrology	, si	gnificantly disturbe	d?		Are "No	ormal Circums	stance	s" prese	nt? Ye	s X	No
Are Vegetation	, Soil,	Hydrology	, na	aturally problematic	??		(If nee	eded, explain	i any ai	nswers i	n Remark	s.)	
SUMMARY	OF FINDINGS -	Attach a	site m	<u>ap showing sates and sate</u>	ampling	g po	int loc	ations, tra	ansec	cts, im	portant	featur	es, etc.
Hydrophytic Ve	getation Present?	Yes 2	X No										
Hydric Soil Pres	0	Yes 2		Is the	Sampleo		a						
Wetland Hydrol		Yes 2		withir	n a Wetla	nd?		Ye	s	XN	lo		
Remarks:													
	d based on domina	nce of hydro	ophytic v	egetation and pres	ence of h	ydric	soils an	d wetland hyd	drology	y			
								0			,	<i>с.</i>	·
v	logy Indicators: ors (minimum of one	e is required	; check a	all that apply)						e Soil Cra	-	m of two	required)
Surface Water	•			Aquatic Fauna (B13)							ted Concav	e Surface	(B8)

 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 Ima Water-Stained Leaves (B9) 	agery (B7)		Marl De Hydroge Oxidize Present Recent	Fauna (B13) eposits (B15) (LRR U) en Sulfide Odor (C1) d Rhizospheres along ce of Reduced Iron (C4 Iron Reduction in Tille uck Surface (C7) Explain in Remarks)	Living Roots (C3) 4)	 Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (C2) 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)
Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (stream ga	Yes Yes Yes	No No No g well, aer	X De X De	epth (inches): epth (inches): epth (inches): evious inspections), if	available:	Wetland Hydrology Present? Yes X No
Remarks: Wetland hydrology present.						



Sampling Point: WL-H-WET

		<u>Absolute</u> <u>% Cover</u>		Indicator Status	Dominance Test	Worksheet:			
ree Stratum	(Plot size: 30 Ft)			Number of Domin			2	(A)
Juniperus virginia		, 10	Y	FACU	That Are OBL, FA	CVV, of FAC		-	_ (, (
Acer rubrum		5	Y	FAC	Total Number of D				
		15	=Total Cover		 Species Across all 	Strata:		3	(B)
<u>Shrub Stratum</u> Clethra alnifolia	(Plot size: 30 Ft) 50	Y	FACW	Percent of Domina That Are OBL, FA		:	66.7%	(A/E
		50			Prevalence Index	Worksheet	•		
Herb Stratum	(Diot cizo: 6 Et				Total % Cover			oly by:	
Carex stricta	(Plot size: 6 Ft) 20	Ν	OBL	OBL species	20	x 1 =	20	
Phragmites austr	alis		N	FACW	FACW species	55	x 2 =	110	
	<u> </u>	25				5	x 3 =	15	
Vine Stratum					FAC species	10	x 4 =	40	
<u>vino otratam</u>					FACU species				
					UPL species	0	x 5 =	0	
				Column Totals:	90	(A)	185	(B	
					Prevalence I	Index = B/A=	=	2.06	
					Hydrophytic Vege	tation Indica	ators:		
					1 - Rapid Test	for Hydroph	ytic Veg	getation	
					X 2 - Dominance	e Test > 50%	, D	-	
					X 3 - Prevalence	e Index ≤ 3.0	I		
					Problematic H	ydrophytic V	/egetatio	on (Exp	olain
					Indicators of hydric s be present, unless d				
					Definitions of Vege				
					Tree – Woody plants approximately 20 ft ((7.6 cm) or larger in	(6 m) or mor	e in heig	ght and	
					Sapling – Woody pla approximately 20 ft (than 3 in. (7.6 cm) D	(6 m) or mor			
					approximately 20 ft	(6 m) or mor 0BH. nts, excluding	re in heig g woody	yht and vines,	
					approximately 20 ft (than 3 in. (7.6 cm) D Shrub – Woody plan	(6 m) or mor DBH. 20 ft (1 to 6 n us (non-woo egardless of	g woody n) in hei dy) plar size. In	y vines, ght and ght. nts, inclu cludes v	less Iding
					approximately 20 ft (than 3 in. (7.6 cm) E Shrub – Woody plar approximately 3 to 2 Herb – All herbaceo herbaceous vines, re plants, except wood	(6 m) or mor DBH. 20 ft (1 to 6 n us (non-woo egardless of y vines, less	e în heig g woody n) in hei dy) plar size. In than ap	y vines, ght. ats, inclu cludes v oproxima	Iess Iding wood ately
					approximately 20 ft (than 3 in. (7.6 cm) D Shrub – Woody plan approximately 3 to 2 Herb – All herbaceo herbaceous vines, re plants, except wood 3 ft (1 m) in height.	(6 m) or mor DBH. 10 ft (1 to 6 n us (non-woo egardless of y vines, less	e în heig g woody n) in hei dy) plar size. In than ap egardles	y vines, ght. ats, inclucing cludes to pproximations ass of he	Iess Iding wood ately
narks: (Include phot	to numbers here or on a se	parate sheet.)			approximately 20 ft (than 3 in. (7.6 cm) E Shrub – Woody plar approximately 3 to 2 Herb – All herbaceo herbaceous vines, rr plants, except wood 3 ft (1 m) in height. Woody vine – All wo Hydrophytic	(6 m) or mor DBH. nts, excluding 20 ft (1 to 6 n us (non-woo egardless of y vines, less body vines, re	e în heig g woody n) in hei dy) plar size. In than ap egardles	y vines, ght. ats, inclucing cludes to pproximations ass of he	Iess Iding wood ately



	ription: (Des		depth nee	eded to documen			confirm	the absence of Indicators.)	
Depth (inches)	Color	Matrix (moist)	%	Color (moist)	Redox %	Features Type ¹	1002	Texture	Remarks
	10YR	2/1	100		/0	туре	LUC -		Black organic
0 to 4 4 to 20	10YR	2/1	100		70	CS	М	LOAMY SAND	70% particles masked with organic
¹ Type: C=Cor	ncentration, E)=Depletion,	RM=Redu	iced Martix, CS=C	overed o	r Coated S	Sand Gra	ains. ² Location: PL=Pore Linir	ng, M=Matrix.
Stratified L Grganic Bc S cm Muck Muck Pres I cm Muck Depleted E Thick Dark Coast Prai Sandy Muc Sandy Gleg Sandy Rec Stripped M	(1) eedon (A2) c (A3) Sulfide (A4) ayers (A5) odies (A6) (LRF cy Mineral (A7) ence (A8) (LRF c (A9) (LRR P, ⁻ Below Dark Sur c Surface (A12) rie Redox (A16 cky Mineral (S1 yed Matrix (S4) dox (S5)	(LRR P, T, U) R U) F) face (A11)) (MLRA 150A) (LRR O, S)	[[[Polyvalue Below Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Ma Depleted Matrix (Redox Dark Surface Depleted Dark Surface Redox Depressio Marl (F10) (LRR I) Depleted Ochric (Iron-Manganese I) Umbric Surface (I) Delta Ochric (F17) Reduced Vertic (I) Piedmont Floodpl 	e (S9) (LR neral (F1) atrix (F2) F3) ace (F6) urface (F7) ins (F8) U) (F11) (MLF F13) (LRR 7) (MLRA - F18) (MLR	(LRR O) (LRR O) (22) (LRR O) (22) (LRR C) (23) (LRR C) (24) (151) (24) (150A, 150)	0, P, T) 0B)	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 Soi (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	e MLRA 150A,B) 19) (LRR P, S, T) Is (F20) FF12) (LRR T, U) egetation and wetland t,
Туре:	tive Layer (if observe	d):	Anomalous Brigh				Hydric Soil Present?	Yes X No
Depth (incl	hes):								
Remarks: 0-4 inches con	isists of a black	organic sedin	nent. Hydric	soils present.					

Sampling Point: OP1-WA-UP

	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet:
Tree Stratum				Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A
Shrub Stratum (Plot size: 30 Ft)				
Rhus copallinum	60	Y	UPL	Total Number of Dominant
Rosa rugosa	30	Y	FACU	_ Species Across all Strata:5 (B
	90	_=Total Cover		Percent of Dominant Species20.0% (A That Are OBL, FACW, or FAC:
Herb Stratum (Plot size: <u>6 Ft</u>)				Prevalence Index Worksheet:
Solidago altissima Phragmites australis	40	<u>Y</u>	FACU FACW	Total % Cover of: Multiply by:
	50		TAGW	$\frac{1}{OBL \text{ species}} \qquad 0 \qquad \frac{1}{x 1 = 0}$
Vine Stratum (Dict circo, 20 Ft)		_=Total Cover		FACW species x 2 = 20
(PIOL SIZE: <u>30 FL</u>)				FAC species 15 x 3 =45
Lonicera japonica Toxicodendron radicans	30	- <u>Y</u> Y	FACU	
Parthenocissus quinquefolia	15 	– <u> </u>	FAC FACU	
	55	=Total Cover	1400	
		_=Total Cover		Column Totals:(A)(A)(A)
				Prevalence Index = B/A= 4.13
				Hydrophytic Vegetation Indicators:
				1 - Rapid Test for Hydrophytic Vegetation
				2 - Dominance Test > 50%
				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 ir (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 les 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, includir herbaceous vines, regardless of size. Includes woo plants, except woody vines, less than approximatel 3 ft (1 m) in height.
				Woody vine – All woody vines, regardless of height
				Hydrophytic
				Vegetation Present? Yes No X
narks: (Include photo numbers here or on a separate sh	eet.)			Variation Dracont?



Profile Desci	ription: (Des		depth ne	eeded to documen			confirm	the absence of Indicators.)	1
Depth		Matrix	24	<u> </u>		Features		<u> </u>	
(inches)	-	(moist)	%	Color (moist)	%	Type ¹		Texture	Remarks
0 to 5	10YR	3/1	50	10YR 6/1	50	С	М	SAND	Organics
5 to 12	10YR	3/4	100					SAND	
12 to 20	10YR	3/3	100					SAND	
¹ Type: C=Cor	ncentration, D	=Depletion,	RM=Red	luced Martix, CS=Co	overed o	r Coated	Sand Gra	ains. ² Location: PL=Por	re Lining, M=Matrix.
 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) 				 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) 				 Piedmont Floodplain Anomalous Bright Loa (MLRA 153B) 	R O) R S) (outside MLRA 150A,B) Soils (F19) (LRR P, S, T) amy Soils (F20)
				Depleted Dark Su Bedox Depression	•	, ,		Red Parent Material (rface (TF12) (LRR T, U)
						Other (Explain in Ren			
Image: Construction of the structure of the					0B) A 149A)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.			
□ Restrict	ive Layer (i	f observe	d):						
Type:								Hydric Soil Present?	Yes No X
Depth (incl	nes):							,	
Remarks: No hydric soil i	indicators obser	rved							

Project/Site: Orsted		City/County: O	cean County	Sampling Date: 6/24/2019
Applicant/Owner: Ocean Wine	d - Farm Property		State: NJ	Sampling Point: OP2-WA-WET
Investigators: David Brizzolar	a Zachary Le	hmann Se	ection, Township, Range	S T Lacey R
Landform (hillslope, terrace, etc.):	Depression	Local Relief (con	cave, convex, none): Co	oncave Slope(%)
Subregion (LRRor MLRA): LRR	T Lat: 39.8	315017 Lo	ong: -74.165943	Datum: Decimal Degrees
Soil Map Unit Name: Appoqui	nimink-Transquaking-Mispillio	n complex	NWI Classifica	ation: E2EM5P
Are climatic / hydrologic condition	s on the site typical for this tim	e of year? Yes X	No (If No, expl	ain in Remarks)
Are Vegetation, Soil	_, Hydrology, significan	tly disturbed? Are	e "Normal Circumstances	" present? Yes X No
Are Vegetation, Soil		problematic?	f needed, explain any an	swers in Remarks.)
SUMMARY OF FINDINGS	5 - Attach a site map sh			ts, 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	within a wettand?	Yes	X No
wetland hydrology all present.				phytic vegetation, hydric soil, and
HYDROLOGY				
Wetland Hydrology Indicators: Primary Indicators (minimum of c □ Surface Water (A1) ✓ High Water Table (A2) ✓ Saturation (A3)	one is required; check all that a	Fauna (B13) posits (B15) (LRR U)	Surface	dicators (minimum of two required) Soil Cracks (B6) Vegetated Concave Surface (B8) Patterns (B10)
 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) 	Oxidized Presend Recent Thin Mu Other (E	en Sulfide Odor (C1) d Rhizospheres along Living Roots te of Reduced Iron (C4) Iron Reduction in Tilled Soils (C6) Jock Surface (C7) Explain in Remarks)	s (C3) Dry-Seat Crayfish Saturatic Geomor Shallow FAC-Net	m Lines (B16) son Water Table (C2) Burrows (C8) on Visible on Aerial Imag.(C9) ohic Position (D2) Aquitard (D3) utral Test (D5) um 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 De Yes X No De	epth (inches):	Wetland Hydrolog	gy Present? Yes <u>X</u> No
Remarks: Wetland hydrology indicators present				



Sampling Point: OP2-WA-WET

		<u>Absolute</u> <u>% Cover</u>	Dominant Species	Indicator Status	Dominance Test W	orkshee	t:		
Tree Stratum					Number of Dominar That Are OBL, FAC			1	(A
<u>Shrub Stratum</u>					Total Number of Dor	ninant			
Herb Stratum	(Plot size: <u>6 Ft</u>)				Species Across all S			1	(B)
Phragmites aust	ralis	70	Y	FACW	- Demonst of Deminord	Chaolor			-
Vine Stratum		70	_=Total Cover		Percent of Dominant That Are OBL, FAC			100.0%	_(A/
					Prevalence Index V	Vorkshe	et:		
					Total % Cover o	f:	Multi	oly by:	
					OBL species	0	x 1 =	0	
					FACW species	70	x 2 =	140	
					FAC species	0	x 3 =	0	
					FACU species	0	x 4 =	0	
					UPL species	0	x 5 =	0	
					Column Totals:	70	(A)	140	(E
					Prevalence Ind	dex = B//	4=	2.00	
					Hydrophytic Vegeta				
					1 - Rapid Test fo			petation	i
					X 2 - Dominance 1		-	J = =======	
					X 3 - Prevalence I				
					Problematic Hyd	Irophytic	Vegetati	on (Exp	plai
					Indicators of hydric soil be present, unless dist				
					Definitions of Vegeta	tion Str	ata:		
					Tree – Woody plants, approximately 20 ft (6 (7.6 cm) or larger in di	m) or m	ore in hei	ght and	3 in DBH
					Sapling – Woody plan approximately 20 ft (6 than 3 in. (7.6 cm) DB	m) or m			
					Shrub – Woody plants approximately 3 to 20				
					Herb – All herbaceous herbaceous vines, reg plants, except woody 3 ft (1 m) in height.	ardless	of size. In	cludes v	woo
					Woody vine – All wood	dy vines,	regardle	ss of he	ight
					Hydrophytic Vegetation Presen				

Hydrophytic vegetation present based on dominance test and prevalence index

Profile Descri	ption: (Describe to the Matrix	e depth nee			icator or ⁻ 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
¹ Type: C=Cond	centration, D=Depletion		ced Martix, CS=Co	vered or	Coated S	Sand Grai	ns. ² Location: PL=Pore Lining	, M=Matrix.
5 cm Mucky Muck Presei 1 cm Muck (Depleted Be Thick Dark S Coast Prairie Sandy Muck Sandy Gleye Sandy Redo Stripped Ma) don (A2) (A3) ulfide (A4) yers (A5) dies (A6) (LRR P, T, U) Mineral (A7) (LRR P, T, U) nce (A8) (LRR U) (A9) (LRR P, T) elow Dark Surface (A11) Surface (A12) e Redox (A16) (MLRA 150A cy Mineral (S1) (LRR O, S) ed Matrix (S4) px (S5)	[[[Polyvalue Below S Thin Dark Surface Loamy Mucky Mind Loamy Gleyed Mai Depleted Matrix (F Redox Dark Surface Depleted Dark Surface Depleted Dark Surface Redox Depression Marl (F10) (LRR U Depleted Ochric (F Iron-Manganese M Umbric Surface (F Delta Ochric (F17) Reduced Vertic (F Piedmont Floodplate Anomalous Bright 	(S9) (LR eral (F1) (trix (F2) 3) ce (F6) face (F7) s (F8)) F11) (MLF fasses (F 13) (LRR (MLRA 1 18) (MLR 18) (MLR	R S, T, U) LRR O) 12) (LRR C P, T, U) 51) A 150A, 15 F19) (MLR,	9, P, T) 0B) A 149A)	Indicators for Problematic H 1 cm Muck (A9) (LRR 0) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outside Piedmont Floodplain Soils (F1 Anomalous Bright Loamy Soils (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (TI Other (Explain in Remarks) ³ Indicators of hydrophytic ve hydrology must be present, unless disturbed or problem	MLRA 150A,B) 9) (LRR P, S, T) s (F20) F12) (LRR T, U) getation and wetland
Restrictiv Type: Depth (inche Remarks: Hydric soil indica		d):					Hydric Soil Present?	/es <u>X</u> No

Project/Site: Orsted	City/County: Ocean	n County Sampling Date: 6/27/2019
Applicant/Owner: Ocean Wind - Farm Property		State: NJ Sampling Point: OP-WC-UP
Investigators: David Brizzolara 2	Zachary Lehmann Sectio	on, Township, Range S T Lacey R
Landform (hillslope, terrace, etc.): Terrace	-	e, convex, none): None Slope(%) 0-2%
Subregion (LRRor MLRA): LRR T		-74.175766 Datum: Decimal Degrees
Soil Map Unit Name: Berryland sand		NWI Classification: PFO1Bd
Are climatic / hydrologic conditions on the site typical	for this time of year? Yes X No	(If No, explain in Remarks)
	·	
Are Vegetation , Soil X, Hydrology , Are Vegetation , Soil , Hydrology ,	a structure in the second is Q	ormal Circumstances" present? Yes X No
	(eded, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach a site	e map snowing sampling point loo	cations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X		
Hydric Soil Present? Yes N	No X Is the Sampled Area within a Wetland?	Vec Ne Y
Wetland Hydrology Present? Yes	No X	Yes NoX
Remarks: Filled area next to bermed trail.		
HYDROLOGY		
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check	ck all that apply)	Secondary Indicators (minimum 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 Imagery (B7) Water-Stained Leaves (B9)	Aquatic Fauna (B13) Marl Deposits (B15) (LRR U) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roots (C3 Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Thin Muck Surface (C7) Other (Explain in Remarks)	 Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imag.(C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Sphagnum moss (D8) (LRR T,U)
Field Observations:		
Surface Water Present? Yes No Water Table Present? Yes No Saturation Present? Yes No (includes capillary fringe) Includes Recorded Data (stream gauge, monitoring well, aerial	X Depth (inches): X Depth (inches): X Depth (inches): al photos, previous inspections), if available:	Wetland Hydrology Present? Yes No_X
Remarks:		
No wetland hydrology indicators present		



Sampling Point: OP-WC-UP

		Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet:
Tree Stratum	(Plot size: 30 Ft)	<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>		0	Number of Dominant Species
Acer rubrum	(PIOUSIZE: <u>50 PL</u>)	25	Y	FAC	That Are OBL, FACW, or FAC: 3 (
Pinus strobus		3	N	FACU	Total Number of Dominant
		28	=Total Cover		Species Across all Strata: 3 (E
Shrub Stratum	(Plot size: 20 Et)				Percent of Dominant Species
Vaccinium corymb	(Plot size: <u>30 Ft</u>) osum	80	Y	FACW	That Are OBL, FACW, or FAC:(A
Acer rubrum		5	N	FAC	Prevalence Index Worksheet:
Sassafras albidum		5	N	FACU	Total % Cover of: Multiply by:
		90	=Total Cover		OBL species 0 x 1 = 0
Herb Stratum	(Plot size: <u>6 Ft</u>)		_		FACW species 80 x 2 = 160
Panicum amarum	(15	Y	FAC	
		15	=Total Cover		
/ine Stratum					
					UPL species x 5 =
					Column Totals: <u>133</u> (A) <u>327</u>
					Prevalence Index = B/A= 2.46
					Hydrophytic Vegetation Indicators:
					1 - Rapid Test for Hydrophytic Vegetation
					X 2 - Dominance Test > 50%
					X 3 - Prevalence Index ≤ 3.0
					Problematic Hydrophytic Vegetation (Expla
					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 (7.6 cm) or larger in diameter at breast height (DB
					Sapling – Woody plants, excluding woody vines,
					approximately 20 ft (6 m) or more in height and les 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, includi herbaceous vines, regardless of size. Includes wo plants, except woody vines, less than approximate 3 ft (1 m) in height.
					Woody vine – All woody vines, regardless of heigh
					Hydrophytic Vegetation Present? Yes X No



Remarks:	Profile Desc	ription: (Des		depth ne	eded to documen			confirm	the absence of Indicators.)	
0 to 2 10YR 3 / 2 100 SAND High root content 2 to 10 to 2/1 100 100 SAND SAND SAND 10 to 20 10YR 2/1 80 10YR 4/1 20 D M SAND SAn					<u> </u>					
2 to 10 10YR 2/1 10 10 10YR 2/1 80 10YR 4/1 20 D M SAND 10 to 20 10YR 2/1 80 10YR 4/1 20 D M SAND 11 10 to 20 10YR 2/1 80 10YR 4/1 20 D M SAND 11 10 to 20 10YR 2/1 80 10YR 4/1 20 D M SAND 11 10 to 20 10YR 2/1 80 10YR 4/1 20 D M SAND 11 11 11 10 10 M SAND Indicators 2 Location: PL=Pore Lining, M=Matrix. 11 Histosol (A1) 10 Thin Dark Surface (S9) (LRR S, T, U) 1 or Muck (A9) (LRR O) 2 cm Muck (A10) (LRR O) 2 cm Muck (A10) (LRR S) 1 or Muck (A9) (LRR P, T, U) Peledmont Floodplain Soils (F19) (MLRA 150A, E90 1 or Muck (A9) (LRP P, T, U) 1 or Muck (A9) (LRP P, T, U) Depleted Dark Surface (F10)	(inches)	Color	(moist)	%	Color (moist)	%	Type 1	Loc ²	Texture	Remarks
10 to 20 10YR 2/1 80 10YR 4/1 20 D M SANDY LOAM "Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. *Location: PL=Pore Lining, M=Matrix. Histosol (A1) Polyvalue Below Surface (S8) (LRR S, T, U) Indicators for Problematic Hydric Soils: 3 Histosol (A1) Diak Kitsic (A3) Leamy Mucky Mineral (F1) (LRR O) 2 cm Muck (A9) (LRR S) Black Histic (A3) Leamy Mucky Mineral (F1) (LRR O) 2 cm Muck (A10) (LRR S) Hydrogen Sullide (A4) Leamy Gleyed Matrix (F2) Reduced Vertic (F18) (outside MLRA 150A,B) Organic Bodies (A6) (LRR P, T, U) Redox Depressions (F6) Redox Depressions (F8) 5 cm Muck (A6) (LRR P, T) Depleted Dark Surface (F7) Red Parent Material (TF2) Muck (A9) (LRR P, T) Redox Depressions (F8) Very Shallow Dark Surface (TF12) (LRR T, U) Depleted Below Dark Surface (A11) Depleted Dark Surface (F13) (LRR O, P, T) Stratace (F13) (LRR O, P, T) Sandy Mucky Mineral (S1) (LRO, S) Umbric Surface (F13) (LRR O, P, T) Stratace (F13) (LRR O, P, T) Sandy Gleyed Matrix (S4) Delta Ochric (F17) (MLRA 1501, 100000000000000000000000000000000	0 to 2	10YR	3/2	100					SAND	High root content
IType: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. 2 Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: Polyvalue Below Surface (S9) (LRR S, T, U) Indicators for Problematic Hydric Soils: ³ Histic Epipedon (A2) Damy Gleyed Matrix (F2) Reduced Vertic (F18) (outside MLRA 150A, B) Hydriogen Suffice (A4) Depleted Matrix (F2) Reduced Vertic (F18) (outside MLRA 150A, B) Organic Bodies (A6) (LRR P, T, U) Depleted Matrix (F3) Anomalous Bright Loamy Soils (F19) (LRR P, S, T) Mucky Mineral (A7) (LRR P, T, U) Depleted Matrix (F3) Redox Dark Surface (F7) Mucky Mineral (A7) (LRR P, T, U) Depleted Oark Surface (F7) Redox Dark Surface (F7) Muck A (A9) (LRR P, T) Marl (F10) (LRR U) Other (Explain in Remarks) Depleted Below Dark Surface (A12) Iron-Manganese Masses (F12) (LRR O, P, T) 3 Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) (LRR P, S, T, U) Delated Overtic (F18) (MLRA 150A, 150B) 3 Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Redox (S5) Reduced Vertic (F18) (MLRA 150A, 150B) 3 Indicators of hydrophytic vegetation and wetland hydrology fuely cegetation and wetland hydrology fuely cegetation and wetland hydrology fuely cegetation and wetland hydr	2 to 10	10YR	2/1	100					SAND	
Hydric Soil Indicators: Polyvalue Below Surface (S8) (LRR S, T, U) Indicators for Problematic Hvdric Soils: ³ Histosol (A1) Thin Dark Surface (S8) (LRR S, T, U) 1 cm Muck (A9) (LRR O) Black Histic (A2) Loamy Mucky Mineral (F1) (LRR O) 2 cm Muck (A9) (LRR S) Black Histic (A3) Loamy Gleyed Matrix (F2) Reduced Vertic (F18) (outside MLRA 150A,B) Organic Bodies (A6) (LRR P, T, U) Depleted Matrix (F3) Piedmont Floodplain Soils (F19) (LRR P, S, T) Muck Presence (A8) (LRR P, T, U) Depleted Dark Surface (F6) (MLRA 153B) Muck Presence (A8) (LRR P, T) Redox Depressions (F8) Very Shallow Dark Surface (T12) (LRR T, U) Depleted Below Dark Surface (A11) Depleted Ochric (F11) (MLRA 151) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) (LRR O, S) Belad Ochric (F13) (MLRA 150A, 150B) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S6) Piedmont Floodplain Soils (F19) (MLRA 149A, 150C, 153D) Matrix (S6) Piedmont Floodplain Soils (F19) (MLRA 149A, 153C, 153D) Remarks: Hydric Soil Present? Yes No	10 to 20	10YR	2/1	80	10YR 4/1	20	D	Μ	SANDY LOAM	
Histosol (A1) Polyvalue Below Surface (S8) (LRR S, T, U) Interaction to Truthe Statuse Histosol (A2) Dawy Mucky Mineral (S1) (LRR O) 2 cm Muck (A9) (LRR O) Black Histic (A3) Loamy Mucky Mineral (F1) (LRR O) 2 cm Muck (A9) (LRR S) Hydrogen Suffide (A4) Depleted Matrix (F2) Reduced Vertic (F18) (outside MLRA 150A, B) Organic Bodies (A6) (LRR P, T, U) Redox Dark Surface (F6) Anomalous Bright Loamy Solis (F20) (MLRA 153B) S or 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) (LRR T, U) 1 train Muck (A9) (LRR P, T) Marl (F10) (LRR U) Other (Explain in Remarks) Beadet Below Dark Surface (A11) Depleted Ochric (F11) (MLRA 151) 3 Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. S andy Mucky Mineral (S1) (LRR O, S) Umbric Surface (F17) (MLRA 150A) 3 Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. S andy Mucky Mineral (S1) (LRR O, S) Delta Ochric (F17) (MLRA 150A, 150B) 3 Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. S andy Mucky Mineral (S1) (LRR O, S) Piedmont Floodplain Soils (F20) (ML	¹ Type: C=Co	ncentration, D	=Depletion,	RM=Red	uced Martix, CS=C	overed o	r Coated S	Sand Gra	ains. ² Location: PL=Pore L	ining, M=Matrix.
Type:	Histosol (A Histic Epip Black Histi Hydrogen Stratified L Organic Be 5 cm Muck Depleted B Thick Dark Coast Prai Sandy Muc Sandy Gle Sandy Rec	A1) bedon (A2) ic (A3) Sulfide (A4) Layers (A5) bodies (A6) (LRF sy Mineral (A7) (sence (A8) (LRF (A9) (LRR P, 1 Below Dark Surf (A9) (LRR P, 1 (A16) (A9) (A9) (LRR P, 1 (A16) (A9) (A17) (A9) (A16) (A17) (A16) (A17)	(LRR P, T, U) & U) (T) ace (A11) (MLRA 150A (LRR O, S)		 Thin Dark Surfac Loamy Mucky Mii Loamy Gleyed M Depleted Matrix (Redox Dark Surfac Depleted Dark Surfac Redox Depression Marl (F10) (LRR Depleted Ochric (Iron-Manganese Umbric Surface (Delta Ochric (F17) Reduced Vertic () Piedmont Floodp 	e (S9) (LR neral (F1) atrix (F2) (F3) ace (F6) urface (F7) ons (F8) U) (F11) (MLR (F13) (LRR 7) (MLRA 1 F18) (MLR	R S, T, U) (LRR O) (LRR O) 12) (LRR C P, T, U) 151) A 150A, 15 (F19) (MLR,	0, P, T) 0B) A 149A)	 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (ou Piedmont Floodplain Soil Anomalous Bright Loamy (MLRA 153B) Red Parent Material (TF2 Very Shallow Dark Surfact Other (Explain in Remarks ³ Indicators of hydrophy hydrology must be pre- unless disturbed or pro- 	s) utside MLRA 150A,B) Is (F19) (LRR P, S, T) / Soils (F20) 2) ce (TF12) (LRR T, U) ks) tic vegetation and wetland esent,
No hydric soil indicators present	Type: Depth (incl Remarks:	hes):		d):					Hydric Soil Present?	Yes <u>No X</u>

Project/Site: Orsted	City/County:	Ocean County Sampling Date: 6/27/2019
Applicant/Owner: Ocean Wind - Farm Property		State: NJ Sampling Point: OP-WC-WET
Investigators: David Brizzolara Zach	ary Lehmann	Section, Township, Range S T Lacey R
Landform (hillslope, terrace, etc.): Toe of Slope	Local Relief (co	oncave, convex, none): Concave Slope(%) 0-2%
Subregion (LRRor MLRA): LRR T Lat	: 39.814365	Long: -74.175752 Datum: Decimal Degrees
Soil Map Unit Name: Berryland sand		NWI Classification: PFO1Bd
Are climatic / hydrologic conditions on the site typical for t	his time of year? Yes X	No (If No, explain in Remarks)
Are Vegetation, Soil, Hydrology, sig	·	Are "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, Hydrology, sig		·
		(If needed, explain any answers in Remarks.)
	<u> </u>	_
	Is the Sampled Area	
Watland Lludralagy Dragant?	within a Wetland?	Yes X No
Wetland Hydrology Present? Yes X No		
Hydrophytic vegetation, hydric soil, and wetland hydrolog		
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check al	ll that apply)	Surface Soil Cracks (B6)
Surface Water (A1)	Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
	Marl Deposits (B15) (LRR U)	Drainage Patterns (B10)
	Hydrogen Sulfide Odor (C1)	Moss Trim Lines (B16)
	Oxidized Rhizospheres along Living Ro	
	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
	Recent Iron Reduction in Tilled Soils (C	6) Saturation Visible on Aerial Imag.(C9) Geomorphic Position (D2)
	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	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): 6	-
Saturation Present? Yes X No	Depth (inches): 0	Wetland Hydrology Present? Yes X No
(includes capillary fringe)		—
Describe Recorded Data (stream gauge, monitoring well, aerial pho	otos, previous inspections), if available:	
Remarks:		
Wetland hydrology indicators present		



Sampling Point: OP-WC-WET

		<u>Absolute</u> % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet:
Tree Stratum	(Plot size: 30 Ft)				Number of Dominant Species
Acer rubrum	(11003120. <u>3010</u>)	35	Y	FAC	That Are OBL, FACW, or FAC:3(
		35	=Total Cover		Total Number of Dominant
Shrub Stratum	(Plot size: 30 Ft)				Species Across all Strata: 3 (E
Vaccinium corym	· · · · · · · · · · · · · · · · · · ·	30	Y	FACW	Percent of Dominant Species 100.0% (A
Sassafras albidu	n	5	N	FACU	That Are OBL, FACW, or FAC:
		35	=Total Cover		Prevalence Index Worksheet:
Herb Stratum	(Plot size: 6 Ft)				Total % Cover of: Multiply by:
Phragmites austr	· · · · · · · · · · · · · · · · · · ·	95	Y	FACW	OBL species 0 x 1 = 0
Osmundastrum c	innamomeum	5	Ν	FACW	FACW species 130 x 2 =260
		100	=Total Cover		FAC species35 x 3 =105
/ine Stratum					FACU species 5 x 4 = 20
					UPL species $0 \times 5 = 0$
					Column Totals: <u>170</u> (A) <u>385</u> (A)
					Prevalence Index = B/A= 2.26
					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 ir (7.6 cm) or larger in diameter at breast height (DBF
					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, includir herbaceous vines, regardless of size. Includes woo plants, except woody vines, less than approximate 3 ft (1 m) in height.
					Woody vine – All woody vines, regardless of heigh
					Hydrophytic Vegetation Present? Yes X No

Hydrophytic vegetation present based on dominance test and prevalence index



	iption: (Des	cribe to the Matrix	depth ne	eded to document		Features	confirm	the absence of Indicators.)	
Depth (inches)	Color	(moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 4	10YR	2/1	100	. <u></u>		CS		SANDY LOAM	organic layer - mucky texture
4 to 20	10YR	2/1	100					SAND	_
¹ Type: C=Con	centration, D)=Depletion,	RM=Redu	uced Martix, CS=Co	overed o	r Coated S	Sand Gra	ains. ² Location: PL=Pore Lining	g, M=Matrix.
 5 cm Muck? Muck Prese 1 cm Muck Depleted B Thick Dark Coast Prair Sandy Muc Sandy Gley Sandy Red Stripped Ma 	1) 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) ie Redox (A16 ky Mineral (S1 red Matrix (S4) ox (S5)	(LRR P, T, U) ? U) fiace (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 M Umbric Surface (F Delta Ochric (F17) Reduced Vertic (F Piedmont Floodpla Anomalous Bright 	(S9) (LR eral (F1) trix (F2) (Ce (F6) rface (F7) (F3) (F1) (MLR (Masses (F (F13) (LRR) (MLRA (MLRA (MLRA (MLR (MLR (MLR)) (MLR	(LRR O) (LRR O) (1000) (LRR O) (1000) (1000) (LRR C (1000) (LRR C (1000) (LRR C (1000) (LRR C (1000) (LRR C) (LRR C) (LRR C) (1000) (10	0, P, T) 0B) A 149A)	Indicators for Problematic H 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outside Piedmont Floodplain Soils (F1 Anomalous Bright Loamy Soils (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (TI Other (Explain in Remarks) ³ Indicators of hydrophytic ve hydrology must be present, unless disturbed or problem ØA, 153C, 153D)	MLRA 150A,B) 9) (LRR P, S, T) s (F20) F12) (LRR T, U) getation and wetland
Restrict Type: Depth (inch	ive Layer (if observe	d):					Hydric Soil Present?	Yes X No
Remarks: Hydric soils pre	esent								

Project/Site: Orsted		City/County: Oc	ean County S	Sampling Date: 6/27/2019
Applicant/Owner: Ocean Wind - Farm	1 Property		State: NJ S	Sampling Point: OP-WDE-UP
Investigators: David Brizzolara	Zachary Lehr	mann Sec	ction, Township, Range	· · · · · · · · · · · · · · · · · · ·
Landform (hillslope, terrace, etc.):	Terrace	Local Relief (conc	ave, convex, none): No	ne Slope(%) 0-2%
Subregion (LRRor MLRA): LRR T	Lat: 39.81		ng: -74.170307	Datum: Decimal Degrees
• · · · · · ·	Transquaking-Mispillion		NWI Classificat	
Are climatic / hydrologic conditions on the		· · ·		ain in Remarks)
Are Vegetation, Soil, Hydro			"Normal Circumstances"	
Are Vegetation, Soil, Hydro			needed, explain any ans	·
SUMMARY OF FINDINGS - Atta		(,
		wing sampling point i		
	es X No	Is the Sampled Area		
	es <u>No X</u>	within a Wetland?	Yes	No X
Wetland Hydrology Present? Y	es <u>No X</u>			
Remarks:	I			
Upland Island				
HYDROLOGY				
Wetland Hydrology Indicators:			Secondary Inc	dicators (minimum of two required)
Primary Indicators (minimum of one is re	quired; check all that ap	ply)	Surface S	Soil Cracks (B6)
Surface Water (A1)		auna (B13)		Vegetated Concave Surface (B8)
High Water Table (A2)		osits (B15) (LRR U)	Drainage	Patterns (B10)
Saturation (A3)		Sulfide Odor (C1)	Moss Trin	n Lines (B16)
Water Marks (B1)		Rhizospheres along Living Roots	(C3) Dry-Sease	on Water Table (C2)
Sediment Deposits (B2)		of Reduced Iron (C4)		Burrows (C8)
Drift Deposits (B3)	Recent In	on Reduction in Tilled Soils (C6)	Saturation	n Visible on Aerial Imag.(C9)
Algal Mat or Crust (B4)	🗌 Thin Muc	k Surface (C7)		hic Position (D2)
Iron Deposits (B5)	Other (Ex	plain in Remarks)		Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)			_	tral Test (D5)
Water-Stained Leaves (B9)			Sphagnur	m moss (D8) (LRR T,U)
Field Observations:				
Surface Water Present? Yes	No X Dept	th (inches):		
Water Table Present? Yes	No X Dept	th (inches):		
Saturation Present? Yes _	No X Dept	th (inches):	Wetland Hydrolog	y Present? Yes No_X
(includes capillary fringe) Describe Recorded Data (stream gauge, monito	ring well, periol photon, prov	ique inepections), if evailable:		
Describe necolded Data (stream gauge, monito	ning weil, aenai priotos, prev	ious inspections), il available.		
Remarks:				
No wetland hydrology indicators present				



Sampling Point: OP-WDE-UP

	<u>Absolute</u> <u>% Cover</u>	Dominant Species	Indicator Status	Dominance Test Worksheet:
Tree Stratum				Number of Dominant Species That Are OBL, FACW, or FAC: 2
Shrub Stratum (Plot size: 30 Ft)				
Baccharis halimifolia	5	Y	FAC	Total Number of Dominant Species Across all Strata: 3 (I
	5	=Total Cover		
Herb Stratum (Plot size: <u>6 Ft</u>)				Percent of Dominant Species 66.7% (Arrow 1997) (Arrow 197
Lolium perenne	65	Y	FACU	Prevalence Index Worksheet:
Desmodium canadense	25	Y	FAC	
Euthamia graminifolia		N	FAC	
Verbena hastata	5	N	FAC	
	105	_=Total Cover		FACW species X 2 = 0
/ine Stratum				FAC species 45 x 3 = 135
				FACU species 65 x 4 =260
				UPL species 0 x 5 = 0
				Column Totals:(A)395
				Prevalence Index = B/A= 3.59
				Hydrophytic Vegetation Indicators:
				1 - Rapid Test for Hydrophytic Vegetation
				X 2 - Dominance Test > 50%
				3 - Prevalence Index ≤ 3.0
				Problematic Hydrophytic Vegetation (Expla
				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 (7.6 cm) or larger in diameter at breast height (DB
				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and lead 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, includ herbaceous vines, regardless of size. Includes we plants, except woody vines, less than approximate 3 ft (1 m) in height.
				Woody vine – All woody vines, regardless of heigh
				Hydrophytic Vegetation Present? Yes X No

Hydrophytic vegetation present based on dominance test > 50%



Profile Description: (Describe to the	depth nee	ded to documen		Features	confirm	the absence of indicators.)	
Depth <u>Matrix</u> (inches) Color (moist)	%	Color (moist)	Redux %	Type ¹	Loc ²	Texture	Remarks
			/0	Турс		SAND	
0 to 8 10YR 2/1 8 to 14 10YR 4/2	<u>100</u> 80	10yr 3/4	20	С	М	SAND SANDY LOAM	
14 to 20 10YR 8/3	60	10yr 5/8	40	<u> </u>	M	SAND	
¹ Type: C=Concentration, D=Depletion,	RM=Reduc	ced Martix, CS=Co	overed o	r Coated S	Sand Gra	ains. ² Location: PL=Pore Lini	ng, 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 Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U)		 Polyvalue Below S Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Ma Depleted Matrix (I Redox Dark Surface Depleted Dark Su Redox Depression Marl (F10) (LRR I) Depleted Ochric (Iron-Manganese I) Umbric Surface (F17) Reduced Vertic (F17) Ret	e (S9) (LR heral (F1) atrix (F2) F3) ace (F6) urface (F7) ns (F8) J) (F11) (MLR F13) (LRR r) (MLRA - E18) (MLR E18) (MLR	(LRR O) (LRR O) (12) (LRR C (12) (LRR C (12) (LRR C (15) (15) (15) (15) (15) (15) (11) (MLR, (15) (11) (MLR,	, P, T) 0B) A 149A)	Indicators for Problematic 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outsic Piedmont Floodplain Soils (F Anomalous Bright Loamy Sc (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (Other (Explain in Remarks) ³ Indicators of hydrophytic v hydrology must be preser unless disturbed or proble	te MLRA 150A,B) F19) (LRR P, S, T) iils (F20) TF12) (LRR T, U) /egetation and wetland it,
Restrictive Layer (if observed Type: Depth (inches): Remarks: No hydric soils present	3): 					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-WD-WET				
Investigators: David Brizzolara	Zachary Lehmann	Section, Township, Range S T Lacey R				
Landform (hillslope, terrace, etc.): Depress	Sion Local Relief (concave, convex, none): Concave Slope(%) 0-2%				
Subregion (LRRor MLRA): LRR T	Lat: 39.812020	Long: -74.170243 Datum: Decimal Degrees				
Soil Map Unit Name: Appoquinimink-Transqual	king-Mispillion complex	NWI Classification: E2EM5P				
Are climatic / hydrologic conditions on the site typic	al 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		(If needed, explain any answers in Remarks.)				
SUMMARY OF FINDINGS - Attach a si	te map showing sampling po	int locations, transects, important features, etc.				
Hydrophytic Vegetation Present? Yes X	No					
Hydric Soil Present? Yes X	No Is the Sampled Are within a Wetland?					
Wetland Hydrology Present? Yes X		Yes <u>X</u> No				
Hydrophytic vegetaion, hydric soil, and wetland hy	drology all present					
HYDROLOGY						
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; ch	neck all that apply)	Secondary Indicators (minimum of two required)				
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 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) 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 Saturation Present? Yes X No	X Depth (inches):	Wetland Hydrology Present? Yes X No				
Saturation Present? Yes X No (includes capillary fringe)	Depth (inches):10_					
Describe Recorded Data (stream gauge, monitoring well, as	vial photos, previous inspections), if available	e:				
Remarks:						
Wetland hydrology present						



Sampling Point: OP-WD-WET

	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Workshee	t:		
Tree Stratum	<u>,,,,,,,,</u>	<u></u>		Number of Dominant Specie That Are OBL, FACW, or F		3	(A
Shrub Stratum (Plot size: 30 Ft)				That Ale ODE, I AOW, OF I		-	_ `
Vaccinium corymbosum	25	Y	FACW	Total Number of Dominant Species Across all Strata:		3	(B
	25	=Total Cover					_`
Herb Stratum (Plot size: <u>6 Ft</u>)	100		54.014/	Percent of Dominant Species That Are OBL, FACW, or FA		100.0%	(A
Phragmites australis Onoclea sensibilis	100 50	- <u>Y</u> Y	FACW FACW	Prevalence Index Workshe	et:		-
	150			Total % Cover of:	Mult	iply by:	
Vine Stratum		_=Total Cover		OBL species 0	x 1 =	0	
vine offation -				FACW species 175	x 2 =	350	
				FAC species 0	x 3 =	0	
				FACU species 0	x 4 =	0	
					x 5 =		
					(A)	350	(1
				Prevalence Index = B/		2.00	
				Hydrophytic Vegetation Ind	icators:		
				1 - Rapid Test for Hydro	phytic Ve	egetation	
				X 2 - Dominance Test > 50)%		
				X 3 - Prevalence Index ≤ 3	.0		
				Problematic Hydrophytic	Vegetat	ion (Exp	plai
				Indicators of hydric soil and weth be present, unless disturbed or p			
				Definitions of Vegetation Str	ata:		
				Tree – Woody plants, excludin approximately 20 ft (6 m) or m (7.6 cm) or larger in diameter a	ore in he	ight and	
				Sapling – Woody plants, exclu approximately 20 ft (6 m) or m than 3 in. (7.6 cm) DBH.			
				Shrub – Woody plants, exclud approximately 3 to 20 ft (1 to 6	ing wood m) in he	ly vines, eight.	
				Herb – All herbaceous (non-wu herbaceous vines, regardless plants, except woody vines, les 3 ft (1 m) in height.	of size. I	ncludes v	woo
				Woody vine – All woody vines,	regardle	ess of he	igh
				Hydrophytic Vegetation Present? Ye	s X	No	

Hydrophytic vegetation present based on dominance test and prevalence index



Depth	Puon. (Des	Matrix	s achai ne			eatures		the absence of Indicators.)	
(inches)	Color	(moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 4	10YR	2/1	100					SAND	roots
4 to 20	10YR	2/1	100					SAND	
¹ Type: C=Cond	centration, D)=Depletion	, RM=Redu	iced Martix, CS=Co	overed or	Coated S	Sand Gra	ins. ² Location: PL=Pore	Lining, M=Matrix.
 5 cm Mucky Muck Presei 1 cm Muck (Depleted Be Thick Dark S Coast Prairie Sandy Muck) (A3) ulfide (A4) yers (A5) dies (A6) (LRF Mineral (A7) nce (A8) (LRF (A9) (LRR P, ⁻ elow Dark Surf Surface (A12) e Redox (A16 sy Mineral (S1	(LRR P, T, U) R U) face (A11)) (MLRA 150/) (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 (F Iron-Manganese M Umbric Surface (F Delta Ochric (F17) 	e (S9) (LRI eral (F1) (trix (F2) F3) cc (F6) rface (F7) ns (F8) J) F11) (MLF Masses (F F13) (LRR	R S, T, U) LRR O) A 151) (LRR C P, T, U)		Indicators for Problema 1 cm Muck (A9) (LRR O 2 cm Muck (A10) (LRR O Reduced Vertic (F18) (o Piedmont Floodplain So Anomalous Bright Loam (MLRA 153B) Red Parent Material (TF Very Shallow Dark Surfa Other (Explain in Remar ³ Indicators of hydroph hydrology must be pr unless disturbed or p) S) utside MLRA 150A,B) ils (F19) (LRR P, S, T) y Soils (F20) 2) ace (TF12) (LRR T, U) ks) ytic vegetation and wetland esent,
Sandy Redo Stripped Ma Dark Surface		P, S, T, U)	[[[Reduced Vertic (F Piedmont Floodpla Anomalous Bright	18) (MLR. ain Soils (I	A 150A, 15 F19) (MLR/	A 149A)		
Depth (inche Remarks:	es):							Hydric Soil Present?	Yes X No
Hydric soils pres	sent								

Project/Site: Orsted		City/Co	unty: Ocean	County S	ampling Date:	6/26/2019
Applicant/Owner: Ocean	Wind - Farm Property			State: NJ Sa	ampling Point:	OP-WE-UP
Investigators: David Brizz	olara	Zachary Lehmann	Sectior	n, Township, Range	S T Lace	ey R
Landform (hillslope, terrace, e			Local Relief (concave			Slope(%) 0-2%
Subregion (LRRor MLRA): L		Lat: 39.812156		-74.186940		1: Decimal Degrees
						1. 200a. 209.000
· · · · · · · · · · · · · · · · · · ·	yland sand			NWI Classificati		
Are climatic / hydrologic condi		-	Yes X No		in in Remarks)	
Are Vegetation, Soil _				rmal Circumstances"	present? Yes	s X No
Are Vegetation, Soil	, Hydrology	_, naturally problemati	c? (If nee	eded, explain any answ	vers in Remarks	s.)
SUMMARY OF FINDIN	IGS - Attach a site	e map showing s	ampling point loc	ations, transects	<u>, important</u>	features, etc.
Hydrophytic Vegetation Pres	sent? Yes	No X				
Hydric Soil Present?	Yes		e Sampled Area n a Wetland?			
Wetland Hydrology Present?	· · · · · · · · · · · · · · · · · · ·	No X		Yes	NoX	
Remarks: No hydrophytic vegetation, h	yric soil, or wetland hyc	drology present				
HYDROLOGY						
Wetland Hydrology Indicate Primary Indicators (minimum		eck all that apply)			cators (minimur bil Cracks (B6)	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 In Water-Stained Leaves (B9)	nagery (B7)	Presence of Reduce	(LRR U) dor (C1) res along Living Roots (C3) d Iron (C4) on in Tilled Soils (C6) (C7)	Drainage F Moss Trim Dry-Seaso Crayfish B Saturation Geomorph Shallow Ac FAC-Neutr	Yegetated Concave Patterns (B10) Lines (B16) In Water Table (C2 urrows (C8) Visible on Aerial In ic Position (D2) quitard (D3) ral Test (D5) In moss (D8) (LRR	2) Imag.(C9)
Surface Water Present?	Yes No	X Depth (inches)				
Water Table Present?	Yes No	X Depth (inches)		Wetler - H.	- Dwa	Vee N V
Saturation Present? (includes capillary fringe)	Yes No	X Depth (inches)		Wetland Hydrology	Present?	Yes No_X
Describe Recorded Data (stream g Remarks: No wetland hydrology indicators pr		ial photos, previous inspe	ctions), if available:			



Sampling Point: OP-WE-UP

	Absolute <u>% Cover</u>	Dominant Species	Indicator Status	Dominance Test Worksheet:	
Tree Stratum (Plot size: 30 Ft)				Number of Dominant Species That Are OBL_FACW_or FAC: 2	(A)
Juniperus virginiana	40	Y	FACU	That Are OBL, FACW, or FAC: 2	_ (/ ()
Nyssa sylvatica	20	Y	FAC	Total Number of Dominant	
Sassafras albidum	5	N	FACU	Species Across all Strata: 4	(B)
	65	=Total Cover		Percent of Dominant Species 50.0%	(A/B)
<u>Shrub Stratum</u> (Plot size: <u>30 Ft</u>)			54014		
Vaccinium corymbosum	25	_ <u>Y</u>	FACW	Prevalence Index Worksheet:	
Quercus stellata	20	Y	UPL	Total % Cover of: Multiply by:	
llex sp.	2	N		OBL species x 1 =0	
	47	=Total Cover		FACW species25 x 2 =50	
Herb Stratum (Plot size: <u>6 Ft</u>)				FAC species21 x 3 =63	
Fescue sp.	1	Ν		FACU species 45 x 4 =180	
	1	=Total Cover		, 00	
Vine Stratum (Plot size: <u>30 Ft</u>)					
Smilax rotundifolia	1	N	FAC	Column Totals:(A)393	<u>(</u> B)
	1	=Total Cover		Prevalence Index = B/A= 3.54	
				Hydrophytic Vegetation Indicators:	
				1 - Rapid Test for Hydrophytic Vegetation	
				2 - Dominance Test > 50%	
				3 - Prevalence Index ≤ 3.0	
				Problematic Hydrophytic Vegetation (Exp	olain)
				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 (7.6 cm) or larger in diameter at breast height (D	
				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and I 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, inclu herbaceous vines, regardless of size. Includes w plants, except woody vines, less than approxima 3 ft (1 m) in height.	voody
				Woody vine – All woody vines, regardless of heig	ght.
Remarks: (Include photo numbers here or on a separate sheet.))			Hydrophytic Vegetation Present? YesNo)	<u>x</u>

Hydrophytic vegetation not present due to dominance test of 0% and prevalance index



	ription: (Des		depth no	eeded to document			confirm	the absence of Indicators.)	
Depth (inches)	Color	Matrix (moist)	%	Color (moist)	Redox I %	Features Type 1	Loc ²	Texture	Remarks
	-		· ·		/0	Type -	LUC -		·
0 to 2	10YR	2/2	100					SAND SAND	Organics
2 to 16	10YR	5/3	100						
16 to 20	10YR	3/1	100					SAND	
¹ Type: C=Co	ncentration, D	D=Depletion,	RM=Red	luced Martix, CS=Cc	overed o	r Coated S	Sand Gra	ains. ² Location: PL=Pore Li	ning, M=Matrix.
Stratified L Organic B 5 cm Muck Muck Pres 1 cm Muck Depleted B Thick Dark Coast Prai Sandy Mu Sandy Gle Stripped M	A1) pedon (A2) ic (A3) Sulfide (A4) Layers (A5) odies (A6) (LRF (A6) (LRF (A7) Sence (A8) (LRF (A9) (LRR P, 1 Below Dark Surf (A9) (LRR P, 1 Below Dark Surf (Surface (A12) irie Redox (A16) Cky Mineral (S1) pyed Matrix (S4) dox (S5)	(LRR P, T, U) { U) (I) (ace (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 Surfa Depleted Dark Surfa Depleted Ochric (I Iron-Manganese M Umbric Surface (F Delta Ochric (F17) Reduced Vertic (F Piedmont Floodpla Anomalous Bright 	e (S9) (LR eral (F1) (trix (F2) 53) cc (F6) rface (F7) ns (F8) J) F11) (MLF Masses (F 513) (LRR 1 (MLRA 1 518) (MLRA 1 518) (MLR	R S, T, U) (LRR O) (12) (LRR O P, T, U) (151) A 150A, 15 (F19) (MLR)	, P, T) 0B) A 149A)	Indicators for Problemation 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (out Piedmont Floodplain Soils Anomalous Bright Loamy S (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface Other (Explain in Remarks ³ Indicators of hydrophyti hydrology must be presunless disturbed or prob	side MLRA 150A,B) ; (F19) (LRR P, S, T) Soils (F20) e (TF12) (LRR T, U) s) c vegetation and wetland sent,
Restric Type:	tive Layer (i	if observe	d):						
Depth (inc	hes):							Hydric Soil Present?	Yes No X
Remarks:	·								
No hydric soils	s present								

Project/Site: Orsted	City/County: C	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 Se	ection, Township, Range S T Lacey R
Landform (hillslope, terrace, etc.): Depressi	ion Local Relief (con	ncave, convex, none): None Slope(%) 0-2%
Subregion (LRRor MLRA): LRR T	Lat: 39.811366 Lo	ong: -74.185059 Datum: Decimal Degrees
Soil Map Unit Name: Atsion sand		NWI Classification: E2EM5P
Are climatic / hydrologic conditions on the site typica	al for this time of year? Yes X	No (If No, explain in Remarks)
Are Vegetation, Soil, Hydrology	· · · · · · · · · · · · · · · · · · ·	e "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, Hydrology	n at walls and blans at a 0	· · · · · · · · · · · · · · · · · · ·
	(If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach a sit	e map snowing sampling point	t locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X	No la the Osmanla d Area	
Hydric Soil Present? Yes X	No Is the Sampled Area within a Wetland?	Yee Y Ne
Wetland Hydrology Present? Yes X	No	Yes <u>X</u> No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; chained) ✓ Surface Water (A1) ✓ High Water Table (A2) ✓ Saturation (A3) ✓ Water Marks (B1)	eck all that apply) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ✔ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres along Living Root	Secondary Indicators (minimum of two required) Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16) S (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 Imag.(C9)
Algal Mat or Crust (B4) Iron Deposits (B5)	Thin Muck Surface (C7)	Geomorphic Position (D2) Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	FAC-Neutral Test (D5)
Water-Stained Leaves (B9)		Sphagnum moss (D8) (LRR T,U)
Field Observations:		
Surface Water Present? Yes X No	Depth (inches): 2	
Water Table Present? Yes X No	Depth (inches): 0	
Saturation Present? Yes X No	Depth (inches): 0	Wetland Hydrology Present? Yes X No
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, ae Standing water in old ditch 0.5-6" deep, no discerable flow.	rial photos, previous inspections), if available:	
Remarks:		



Sampling Point: OP-WE-WET

		Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet:	
Tree Stratum	(Plot size: 30 Ft)	<u>,</u>	<u></u>	<u></u>	Number of Dominant Species	(4
Acer rubrum	(50	Y	FAC	That Are OBL, FACW, or FAC: 2	(/
		50	=Total Cover		Total Number of Dominant	(5
Shrub Stratum					Species Across all Strata: 2	(E
<u>Herb Stratum</u> Phragmites aust	(Plot size: <u>6 Ft</u>) ralis	50	Y	FACW	Percent of Dominant Species 100.0)%_ (A
Lemna sp.		10	N	OBL	Prevalence Index Worksheet:	
		60	=Total Cover		Total % Cover of: Multiply b	y:
Vine Stratum					OBL species 10 x 1 =1	0
					FACW species 50 x 2 =10	00
					FAC species 50 x 3 =1	50
					FACU species x 4 =0)
					UPL species0 x 5 =0)
					Column Totals:110(A)26	0 (I
					Prevalence Index = B/A= 2.36	6
					Hydrophytic Vegetation Indicators:	
					1 - Rapid Test for Hydrophytic Vegetat	ion
					X 2 - Dominance Test > 50%	
					X 3 - Prevalence Index ≤ 3.0	
					Problematic Hydrophytic Vegetation (Explai
					Indicators of hydric soil and wetland hydrology m be present, unless disturbed or problematic.	ust
					Definitions of Vegetation Strata:	
					Tree – Woody plants, excluding woody vines approximately 20 ft (6 m) or more in height a (7.6 cm) or larger in diameter at breast heigh	nd 3 in
					Sapling – Woody plants, excluding woody vii approximately 20 ft (6 m) or more in height a than 3 in. (7.6 cm) DBH.	
					Shrub – Woody plants, excluding woody vine approximately 3 to 20 ft (1 to 6 m) in height.	es,
					Herb – All herbaceous (non-woody) plants, in herbaceous vines, regardless of size. Includ- plants, except woody vines, less than approx 3 ft (1 m) in height.	es woo
					Woody vine – All woody vines, regardless of	height
					Hydrophytic Vegetation Present? Yes X No	

Hydrophytic vegetation present based on dominance test and prevalence test



	iption: (Des	cribe to the Matrix	depth nee	eded to document		icator or ⁻ eatures	confirm	the absence of Ir	ndicators.)		
Depth (inches)	Color	(moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	2	Rem	arks
0 to 6	10YR	5/4	100			.)po		SAND	·	peat, plant	
6 to 10	10YR	4/1	100					SAND		pear, plain	
10 to 20	10YR	3/1	100			<u> </u>		SAND			
				ced Martix, CS=Co	overed or	Coated S	and Gra		on: PL=Pore Lining, I	N=Matrix.	
Hydric Soil I	ndicators:		Г	¬				Indicators fo	or Problematic Hyd	ric Soils	. 3
5 cm Mucky Muck Prese 1 cm Muck Depleted Ba Thick Dark Coast Prairi Sandy Much Sandy Gley Sandy Redo Stripped Mat	didon (A2) (A3) (aulfide (A4) (ayers (A5) dies (A6) (LRF (Mineral (A7) ((A9) (LRF P, 1 (A9) (LRR P, 1 elow Dark Surf Surface (A12) (A9) (LRR P, 1 (A9) (LR P, 1 (A9	LRR P, T, U) U) ace (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 Surface Redox Depression Marl (F10) (LRR U Depleted Ochric (F Iron-Manganese M Umbric Surface (F Delta Ochric (F17) Reduced Vertic (F Piedmont Floodpla Anomalous Bright 	(S9) (LRi eral (F1) (trix (F2) 3) cc (F6) rface (F7) ns (F8) 1) =11) (MLF fasses (F 13) (LRR 13) (LRR 18) (MLR 1 18) (MLR	R S, T, U) LRR O) 12) (LRR O P, T, U) 51) A 150A, 15 F19) (MLRA	, P, T))B) \ 149A)	 1 cm Muc 2 cm Muc Reduced Piedmont Anomalou (MLRA 15 Red Pare Very Sha Other (Ex ³ Indicat hydrolou unless 	ck (A9) (LRR O) ck (A10) (LRR S) Vertic (F18) (outside M t Floodplain Soils (F19) us Bright Loamy Soils (F	LRA 150A, (LRR P, S, 720) 2) (LRR T, tation and v	- Т) U)
Type: <u>silt</u> Depth (inch Remarks:	es): <u>10-</u>	20						Hydric Soil Pr			No
									lacially rounded quartz;		

Project/Site: Orsted		City/County:	Ocean County		Sampling Dat	e: 5/5/2020
Applicant/Owner: Ocean Wind	- Holtec Property		State:	NJ	Sampling Poir	nt: WL-A-UPL
Investigators: Stephen Seymou	ur Jaclyn Cha	pman	Section, Towns	ship, Rang	je S TL	acey R
Landform (hillslope, terrace, etc.):	Level	Local Relief (concave, convex	k, none): ∣	None	Slope(%) 0
Subregion (LRRor MLRA): LRR T	Lat: 39.8	310717	Long: -74.199	9280	Da	tum: WGS 1984
Soil Map Unit Name: Psammer	its, 0-2% slope		N	VI Classifi	cation: Not ma	apped
Are climatic / hydrologic conditions	on the site typical for this tim	ie of year? Yes X	No	(If No, ex	plain in Remark	s)
Are Vegetation, Soil,	Hydrology, significar	tly disturbed?	Are "Normal Cir	cumstance	es" present?	Yes X No
Are Vegetation, Soil,	Hydrology, naturally	problematic?	(If needed, ex	plain anv a	answers in Rema	arks.)
SUMMARY OF FINDINGS	Attach a sito man sh	owing campling no	, , , , , , , , , , , , , , , , , , ,	. ,		,
	-	lowing sampling po		, แลแระ	cis, importa	int leatures, etc.
Hydrophytic Vegetation Present?	Yes No X	Is the Sampled Are	2			
Hydric Soil Present?	Yes No X	within a Wetland?	d	Yes	No	x
Wetland Hydrology Present?	Yes No X			103		<u></u>
Remarks: Area sampled is not a wetland bas	ed on lack of hydrophytic ve	getation, hydric soils, and	wetland hydrolog	ду		
HYDROLOGY						
Wetland Hydrology Indicators:			S	econdary	Indicators (minin	mum of two required)
Primary Indicators (minimum of on	e is required; check all that a	apply)		Surfac	e Soil Cracks (B6)	1
Surface Water (A1)	Aquatic	Fauna (B13)		<u> </u>	ely Vegetated Con	· · ·
☐ High Water Table (A2)	Marl De	eposits (B15) (LRR U)		_	age Patterns (B10)	
Saturation (A3)	, , ,	en Sulfide Odor (C1)			Trim Lines (B16)	
Water Marks (B1)	Oxidize	d Rhizospheres along Living R	toots (C3)	_ ·	eason Water Table	(C2)
Sediment Deposits (B2)	Present	ce of Reduced Iron (C4)		Crayfis	sh Burrows (C8)	

 Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial I Water-Stained Leaves (B9) 	magery (B7)		R T	resence of Reduced Iron (C4) tecent Iron Reduction in Tilled Soils (C6) hin Muck Surface (C7) Other (Explain in Remarks)	 Saturation Visible on Aerial Imag.(C9) Geomorphic Position (D2) 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	Х	Depth (inches):	
Saturation Present?	Yes	No	х	Depth (inches):	Wetland Hydrology Present? Yes <u>No X</u>
(includes capillary fringe)	., .			· · · /	
	gauge, monitori	ng well, ae		tos, previous inspections), if available:	
	gauge, monitori	ng well, ae		· · · /	



Sampling Point: WL-A-UPL

	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet:		
Tree Stratum (Plot size: 30 Ft)	<u></u>	<u></u>		Number of Dominant Species	2	(A
Juniperus virginiana	20	Y	FACU	That Are OBL, FACW, or FAC:	2	(/
Pinus sylvestris	20	Y	NI	Total Number of Dominant	_	(=)
	40	=Total Cover		Species Across all Strata:	5	(B)
Shrub Stratum (Plot size: <u>30 Ft</u>)				Percent of Dominant Species That Are OBL, FACW, or FAC:	40.0%	(A/
Juniperus virginiana	20	Y	FACU			
Myrica pensylvanica	15 	Y	FAC	Prevalence Index Worksheet:		
Harb Stratum (DL +		=Total Cover		0	Multiply by: 1 = 0	
<u>Herb Stratum</u> (Plot size: <u>6 Ft</u>) Panicum dichotomiflorum	20	V	FACW		1 = 0 2 = 60	
Fragaria virginiana		- Y Y	FACW		2 = 00 3 = 45	
		=Total Cover				
/ine Stratum					4 = 240	
				UPL species 0 x	5 = 0	
				Column Totals: 105 (A	.) 345	(В
				Prevalence Index = B/A=	3.29	
				Hydrophytic Vegetation Indicato	ors:	
				1 - Rapid Test for Hydrophytic	c Vegetation	
				2 - Dominance Test > 50%		
				3 - Prevalence Index ≤ 3.0		
				Problematic Hydrophytic Veg	etation (Ex	olain
				Indicators of hydric soil and wetland h be present, unless disturbed or proble	ydrology must	
				Definitions of Vegetation Strata:		
				Tree – Woody plants, excluding wo approximately 20 ft (6 m) or more in (7.6 cm) or larger in diameter at bre	n height and	3 in. DBH)
				Sapling – Woody plants, excluding	woodv vines	
				approximately 20 ft (6 m) or more in than 3 in. (7.6 cm) DBH.		
				Shrub – Woody plants, excluding w approximately 3 to 20 ft (1 to 6 m) i	/oody vines, n height.	
				Herb – All herbaceous (non-woody) herbaceous vines, regardless of siz plants, except woody vines, less tha 3 ft (1 m) in height.	ze. Includes v	NOOC
				Woody vine – All woody vines, rega	ardless of he	ight.



	ption: (Des		depth ne	eded to document			confirm	the absence of Indicators.)	
Depth (inches)	Color	Matrix ⁻ (moist)	%	Color (moist)	Redox i	⁻ eatures Type ¹	Loc ²	Texture	Remarks
					70	Турс		ORGANIC/SANDY LOAM	
0 to 6 6 to 20	10YR 10YR	3/2	100			<u> </u>		SANDY SILT	40% rounded pebbles
0 10 20		570				·			
¹ Type: C=Conc	centration, [D=Depletion,	RM=Redu	uced Martix, CS=Co	overed or	Coated S	Sand Gra	ains. ² Location: PL=Pore Lining	, M=Matrix.
5 cm Mucky Muck Preser 1 cm Muck (Depleted Be Thick Dark S Coast Prairie Sandy Muck Sandy Gleyee Sandy Redo Stripped Mat) 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 cy Mineral (S1 ed Matrix (S4) px (S5)	(LRR P, T, U) R U) 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 (F17) Reduced Vertic (F17) Anomalous Bright 	(S9) (LR eral (F1) (trix (F2) (C2 (F6) (Face (F6) (F3) (F1) (MLF (Masses (F (F13) (LRR (MLRA 1 (MLRA 1 (18) (MLR (MLR 1 (MLR 1 (MLR) (MLR	R S, T, U) (LRR O) 12) (LRR O P, T, U) 51) A 150A, 150 F19) (MLR4	, P, T) DB) A 149A)	Indicators for Problematic H 1 cm Muck (A9) (LRR 0) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outside Piedmont Floodplain Soils (F1: Anomalous Bright Loamy Soils (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (TF Other (Explain in Remarks) ³ Indicators of hydrophytic ven hydrology must be present, unless disturbed or problem	MLRA 150A,B) 9) (LRR P, S, T) s (F20) =12) (LRR T, U) getation and wetland
Type: Depth (inche Remarks:	es):	heast of wetlan		c soils not present.				Hydric Soil Present?	/es <u>No X</u>

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 C	hapman	Section, Township, Range S T Lacey R New J
Landform (hillslope, terrace, etc.): Level	Local Relief (cc	oncave, convex, none): Concave Slope(%) 0
Subregion (LRRor MLRA): LRR T Lat: 3	9.810717	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	time of year? Yes X	No (If No, explain in Remarks)
Are Vegetation, Soil, Hydrology, signific	antly disturbed? A	Are "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, Hydrology, natural	ly problematic?	(If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS Attach a site man		nt locations, transects, important features, etc.
SUMMART OF FINDINGS - Attach a site maps	snowing sampling poin	in locations, transects, important reatures, 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
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that	it apply)	Surface Soil Cracks (B6)
	atic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)	Deposits (B15) (LRR U)	Drainage Patterns (B10)
Saturation (A3)	ogen Sulfide Odor (C1)	Moss Trim Lines (B16)
Water Marks (B1)	ized Rhizospheres along Living Roo	bots (C3) Dry-Season Water Table (C2)
Sediment Deposits (B2)	ence of Reduced Iron (C4)	Crayfish Burrows (C8)
Drift Deposits (B3)	ent Iron Reduction in Tilled Soils (Co	
Algal Mat or Crust (B4)	Muck Surface (C7)	Geomorphic Position (D2)
Iron Deposits (B5)	er (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	Х	No
Water Table Present?	Yes	Х	No
Saturation Present?	Yes	х	No

(includes capillary fringe)

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

Remarks:

Ponding observed. Wetland hydrology present.



Depth (inches):

Depth (inches):

Depth (inches):

1

To Surface

To Surface

Yes X No

Wetland Hydrology Present?

Sampling Point: WL-A-WET

		<u>Absolute</u> % Cover	<u>Dominant</u> Species	Indicator Status	Dominance Test Works	heet:		
Tree Stratum	(Plot size: 30 Ft)				Number of Dominant Sp		3	(/
Acer rubrum		10	Y	FAC	That Are OBL, FACW, o	or FAC:	3	_ (
Juniperus virgini	ana	10	- <u> </u>	FACU	Total Number of Domina	nt		
		20	=Total Cover		Species Across all Strata		4	(
Shrub Stratum	(Plot size: 30 Ft)				Percent of Dominant Spe		75.0%	(4
Myrica pensylva	•	30	Y	FAC	That Are OBL, FACW, or	FAC: -	70.070	_ (/
		30	=Total Cover		Prevalence Index Work	sheet:		
Herb Stratum	(Plot size: <u>6 Ft</u>)				Total % Cover of:		tiply by:	
Panicum dichoto	pmiflorum	90	Y	FACW	OBL species	0 x 1 =	0	
		90	=Total Cover		FACW species	00 x 2 =	180	
/ine Stratum					FAC species 4	0 x 3 =	120	
					•	0 x 4 =	40	
					•	0 x 5 =	0	
					Column Totals: 14	40 (A)	340	
					Prevalence Index =	= B/A=	2.43	
					Hydrophytic Vegetation	Indicators:		
					1 - Rapid Test for Hy	drophytic V	egetatior	ı
					X 2 - Dominance Test	> 50%		
					X 3 - Prevalence Index	< 3.0		
					Problematic Hydroph			
					be present, unless disturbed			
					Definitions of Vegetation	Strata:		
					Tree – Woody plants, excl approximately 20 ft (6 m) o (7.6 cm) or larger in diame	or more in he	eight and	
					Sapling – Woody plants, e approximately 20 ft (6 m) o than 3 in. (7.6 cm) DBH.			
					Shrub – Woody plants, exo approximately 3 to 20 ft (1	cluding wood to 6 m) in h	dy vines, eight.	
					Herb – All herbaceous (no herbaceous vines, regardle plants, except woody vines 3 ft (1 m) in height.	ess of size.	ncludes	wo
					Woody vine – All woody vi	nes, regardl	ess of he	eigl
		st)			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.



Profile Descriptio	n: (Describe to t	the depth ne	eded to documen			confirm	the absence of Indicators.)	
Depth	Matrix				Features			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 8 10	0YR 4/2	100					FINE SANDY LOAM	
8 to 20 10	OYR 4/2	80	10YR 4/6	20	С	М	FINE CLAY SAND	20% rounded pebbles
¹ Type: C=Concent	ration, D=Depletio	on, RM=Redu	uced Martix, CS=C	overed o	r Coated S	and Gra	ains. ² Location: PL=Pore Lining,	M=Matrix.
5 cm Mucky Mine Muck Presence (1 cm Muck (A9) Depleted Below Thick Dark Surfa Coast Prairie Re Sandy Mucky Mii Sandy Gleyed Mi Sandy Redox (Si Stripped Matrix (si	(A2) (A5) (A5) (A6) (LRR P, T, U) eral (A7) (LRR P, T, (LRR P, T) Dark Surface (A11) ce (A12) dox (A16) (MLRA 15 neral (S1) (LRR O, S atrix (S4) 5)	U) 50A)	 Polyvalue Below Thin Dark Surface Loamy Mucky Min Loamy Gleyed Matrix (Redox Dark Surface Depleted Dark Surface Redox Depressio Marl (F10) (LRR I Depleted Ochric (Iron-Manganese I Umbric Surface (I) Delta Ochric (F17 Reduced Vertic (I) Piedmont Floodp 	e (S9) (LR neral (F1) atrix (F2) F3) ace (F6) urface (F7) ons (F8) U) (F11) (MLR F13) (LRR 7) (MLRA - F18) (MLR	(LRR O) (LRR O) (12) (LRR O (12) (LRR O (151) (151) (151) (150A, 150A, 15)	, P, T) 0B)	Indicators for Problematic Hy 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outside M Piedmont 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 vega hydrology must be present, unless disturbed or problema	/ILRA 150A,B)) (LRR P, S, T) (F20) (2) (LRR T, U) etation and wetland
Restrictive L		ved):	Anomalous Brigh	t Loamy S	oils (F20) (N	ILRA 149		
Depth (inches):	9						Hydric Soil Present? Ye	es X No
Remarks: Hydric soils present	based on soils meet	ting criteria for t	he depleted matrix (F	3) indicato	л			

Project/Site: Orsted	City/County: Ocea	an County Sampling Date: 5/5/2020
Applicant/Owner: Ocean Wind - Holtec Property		State: NJ Sampling Point: WL-B-UPL
Investigators: Stephen Seymour Jaclyn	Chapman Section	on, Township, Range S T Lacey R
Landform (hillslope, terrace, etc.): Hillslope	Local Relief (concav	ve, convex, none): Concave Slope(%) 10
· · · · · · · · · · · · · · · · · · ·	39.810893 Long	: -74.200239 Datum: WGS 1984
Soil Map Unit Name: Psamments, 0-2% slopes		NWI Classification: Not mapped
Are climatic / hydrologic conditions on the site typical for th	is time of year? Yes X No	(If No, explain in Remarks)
Are Vegetation, Soil, Hydrology, sign	· · · · · · · · · · · · · · · · · · ·	Normal Circumstances" present? Yes X No
Are Vegetation, Soil, Hydrology, natu	nally, much la mattic 2	eeded, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach a site may	(ii ii	
Hydrophytic Vegetation Present? Yes <u>No</u>	Is the Sampled Area	
Hydric Soil Present? YesNo	X within a Wetland?	Yes No X
Wetland Hydrology Present? Yes No	x	
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)	quatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)	arl Deposits (B15) (LRR U)	Drainage Patterns (B10)
Saturation (A3)	/drogen Sulfide Odor (C1)	Moss Trim Lines (B16)
	xidized Rhizospheres along Living Roots (C	
	esence of Reduced Iron (C4)	Crayfish Burrows (C8)
	ecent Iron Reduction in Tilled Soils (C6)	Saturation Visible on Aerial Imag.(C9)
	nin Muck Surface (C7)	Geomorphic Position (D2)
Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7)	ther (Explain in Remarks)	Shallow Aquitard (D3) 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 photo	os, previous inspections), if available:	
Remarks:		
No wetland hydrology present.		



Sampling Point: WL-B-UPL

		<u>Absolute</u> <u>% Cover</u>	<u>Dominant</u> Species	Indicator Status	Dominance Test Worksheet	:		
Tree Stratum	(Plot size: 30 Ft)		_ <u></u>		Number of Dominant Species		C	
Pinus resinosa	(FIOUSIZE: <u>50 FL</u>)	30	Y	FACU	That Are OBL, FACW, or FA	C:	2	(/
Prunus virginiana		20	- <u>Y</u>	FACU	Total Number of Dominant			
Pinus sylvestris			- <u>Y</u>	NI	Species Across all Strata:		7	(E
		60						_ `
Shrub Stratum	(Plot size: _30 Ft)		_=Total Cover		Percent of Dominant Species That Are OBL, FACW, or FAC		28.6%	(A
Prunus virginiana		25	Y	FACU	Prevalence Index Workshee	et:		
		25	=Total Cover		Total % Cover of:	Multi	oly 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 virginian	a	10	Y	FACU		x 3 =	90	
Thuja occidentalis	-	10	Y	FACW	rac species			
		50			FACU species 95	x 4 =	380	
line Stratum			=Total Cover		UPL species 0	x 5 =	0	
/ine Stratum	(Plot size: <u>30 Ft</u>)				Column Totals: 135	(A)	490	(
Celastrus orbiculate	us	10	Y	FACU		_`´ _		`
		10	=Total Cover		Prevalence Index = B/A	=	3.63	
					Hydrophytic Vegetation India	atore:		
					1 - Rapid Test for Hydrop		getation	
					2 - Dominance Test > 50	%		
					3 - Prevalence Index ≤ 3.	0		
					Duchleur etie Lluducuh, die 1		(-	
					Problematic Hydrophytic	vegetati	on (Ex∣	SIA
					Indicators of hydric soil and wetla be present, unless disturbed or pr			
					Definitions of Vegetation Stra	ita:		
					Tree – Woody plants, excluding			
					approximately 20 ft (6 m) or mo (7.6 cm) or larger in diameter a			
					Sapling – Woody plants, exclud approximately 20 ft (6 m) or mo			
					than 3 in. (7.6 cm) DBH.		gin and	103
					Shrub – Woody plants, excludir approximately 3 to 20 ft (1 to 6			
					Herb – All herbaceous (non-wo	ody) plar	nts, inclu	ıdiı
					herbaceous vines, regardless o plants, except woody vines, les 3 ft (1 m) in height.	f size. In	cludes v	woo
					Woody vine – All woody vines,	regardle	ss of he	igh
					Hydrophytic			

Hydrophytic vegetation not dominant based on less than 50% of species that are OBL, FACW, or FAC and prevalence index greater than 3



Profile Description: (Describe	to the depth ne	eded to document	t the ind	icator or	confirm	the absence of Indicators.)	
Depth Mat				eatures			
(inches) Color (mois	t) %	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 8 10YR 3/	2 100					FINE SANDY LOAM	
8 to 18 10YR 5/	3 100					FINE CLAY LOAM	
18 to 20 10YR 2/	1 100					GRANULAR BLACK	Granular coal residue
¹ Type: C=Concentration, D=Depl	letion, RM=Red	uced Martix, CS=Co	overed or	Coated S	Sand Gra	ains. ² Location: PL=Pore Lining	ı, 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, L 5 cm Mucky Mineral (A7) (LRR P Muck Presence (A8) (LRR U) 1 cm Muck (A9) (LRR P, T) Depleted Below Dark Surface (A2) Coast Prairie Redox (A16) (MLR4 Sandy Mucky Mineral (S1) (LRR C) Sandy Gleyed Matrix (S4) Sandy Redox (S5)	, T, U) 11) A 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 (I Iron-Manganese N Umbric Surface (F Delta Ochric (F17) Reduced Vertic (F 	(S9) (LR) eral (F1) (attrix (F2) (F3) (rface (F6) (F6) (F6) (F1) (MLF) (Masses (F (F13) (LRR) (MLRA 1)	R S, T, U) LRR O) 12) (LRR O P, T, U) 51)	, P, T)	Indicators for Problematic H 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outside 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 very hydrology must be present, unless disturbed or problem	MLRA 150A,B) 9) (LRR P, S, T) 5 (F20) ^E 12) (LRR T, U) getation and wetland
Stripped Matrix (S6)	U)	Piedmont Floodpla					
		Anomalous Bright	Loamy So	oils (F20) (I	MLRA 149	9A, 153C, 153D)	
Restrictive Layer (if obs Type:	erved):					Hydric Soil Present?	′es No X
Depth (inches):							
Remarks: Layer of coal residue (black, granular	r) encountered at 1	18-20" below ground su	ırface. No	hydric soils	s present d	due to not meeting any indicator criteria.	

Project/Site: Orsted	City/County: O	Ocean County Sampling Date: 8/10/2020
Applicant/Owner: Ocean Wind - Holtect Property		State: NJ Sampling Point: WL-B-WET2
nvestigators: Zak Lehmann Jac	lyn Chapman Se	ection, Township, Range S T Lacey R
andform (hillslope, terrace, etc.): Level	Local Relief (con	ncave, convex, none): Concave Slope(%) 0
Subregion (LRRor MLRA): LRR T La	it: 39.810737 Lo	ong: -74.200351 Datum: WGS 1984
Soil Map Unit Name: Psamments, 0-2% slopes		NWI Classification: None
Are climatic / hydrologic conditions on the site typical for	this time of year? Yes X	No (If No, explain in Remarks)
re Vegetation, Soil, Hydrology, si	gnificantly disturbed? Are	re "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, Hydrology, na	aturally problematic?	(If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach a site m	ap showing sampling point	t locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X No		
Hydric Soil Present? Yes X No	Is the Sampled Area within a Wetland?	Yes Y Ne
Wetland Hydrology Present? Yes X No		Yes X No
Remarks: Area is a wetland based on presence of hydrophytic ve	jetation, hydric soils, and wetland hy	'drology
IYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)

wetland Hydrology Indicators	5:					Secondary indicators (minimum or two required)
Primary Indicators (minimum of	one is r	require	ed; ch	eck all that apply)		Surface 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) 	gery (B7)			Aquatic Fauna (B13) Arr Deposits (B15) (LRR Hydrogen Sulfide Odor (C Oxidized Rhizospheres alc Presence of Reduced Iron Recent Iron Reduction in T Thin Muck Surface (C7) Other (Explain in Remarks	1) ong Living Roots (C3) (C4) Tilled Soils (C6)	 Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (C2) 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)
Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (stream gau	Yes Yes Yes Ige, monif	X X X	No No No well, ac	Depth (inches): Depth (inches): Depth (inches): Perial photos, previous inspections)	2 To surface To surface), if available:	Wetland Hydrology Present? Yes X No
Remarks: Wetland hydrology present						



Sampling Point: WL-B-WET2

	<u>Absolute</u> <u>% Cover</u>	<u>Dominant</u> Species	Indicator Status	Dominance Test Workshe	et:		
Tree Stratum				Number of Dominant Spec That Are OBL, FACW, or F		1	(4
Shrub Stratum					AU		_`
Herb Stratum (Plot size: 6 Ft)				Total Number of Dominant Species Across all Strata:		1	(E
Phragmites australis	100	Y	FACW			•	_ (-
Vine Stratum	100	=Total Cover		Percent of Dominant Specie That Are OBL, FACW, or F		100.0%	(A
				Prevalence Index Worksh	eet:		
				Total % Cover of:		ply 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	
				Prevalence Index = B	/A=	2.00	
				Hydrophytic Vegetation Inc	licators:		
				1 - Rapid Test for Hydro	ophytic Ve	getation	
				X 2 - Dominance Test > 5	0%		
				X 3 - Prevalence Index ≤	3.0		
				Problematic Hydrophyti	c Vegetati	on (Exp	pla
				Indicators of hydric soil and we be present, unless disturbed or			
				Definitions of Vegetation St	rata:		
				Tree – Woody plants, excludi approximately 20 ft (6 m) or n (7.6 cm) or larger in diameter	nore in hei	ght and	
				Sapling – Woody plants, excl approximately 20 ft (6 m) or n than 3 in. (7.6 cm) DBH.			
				Shrub – Woody plants, exclud approximately 3 to 20 ft (1 to			
				Herb – All herbaceous (non-w herbaceous vines, regardless plants, except woody vines, le 3 ft (1 m) in height.	of size. Ir	cludes v	wo
				Woody vine – All woody vines	s, regardle	ss of he	igł
				Hydrophytic Vegetation Present? Y			



Depth (inches) Matrix Redox Features 0 to 4 10YR 2 / 1 100 70 CS M SANDY CLAY Fibrous black muck; 70% particles masked with regaric 4 to 20 10YR 5 / 2 100 70 CS M SANDY CLAY Fibrous black muck; 70% particles masked with regaric 1*Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. 2 Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: Polyvalue Below Surface (S8) (LRR S, T, U) Indicators for Problematic Hydric Soils: 3 1*Histic Epideon (A2) Leamy Mucky Mineral (F1) (LRR O) 2 and Muck (A9) (LRR O) 2 and Muck (A9) (LRR C) 9 Black Histic (A3) Leamy Mucky Mineral (F2) Pedemont Floodplain Soils (F19) (LRR P, S, T) Pedemont Floodplain Soils (F19) (LRR P, S, T) 0 organic Bodies (A6) (LRR P, T, U) Redox Dark Surface (F6) (Muck A1536) (Muck A1536) 5 orm Muck Mineral (A7) (LRR P, T, U) Redox Dark Surface (F7) Red areant Material (TF2) Anomalous Bright Leamy Soils (F20) (MLRA 1536) 1 orm Muck (A9) (LRR P, T, U) Depleted Dark Surface (F1) (Muck A1564) Organic A1564 Very Shallow Dark Surface (TF12) (LR T, U) 1 orm Muck (A9) (LRR
0 to 4 10YR 2 / 1 100 70 CS M SANDY CLAY Fibrous black muck: 70% particles masked with organic 4 to 20 10YR 5 / 2 100 70 CS M SANDY CLAY Fibrous black muck: 70% particles masked with organic 1'Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. 2 Location: PL=Pore Lining, M=Matrix. Histosol (A1) Thin Dark Surface (S9) (LRR S, T, U) 1 orn Muck (A9) (LRR O) 2 orn Muck (A9) (LRR O) Black Histic (A3) Loamy Gleyed Matrix (F2) 1 orn Muck (A9) (LRR P, T, U) 2 orn Muck (A9) (LRR P, S, T) Mucky Mineral (A1) Thin Dark Surface (F6) Red/Darent Material (TF2) Red/Darent Material (TF2) Mucky Mineral (A1) Red/Darent Material (TF2) Red/Darent Material (TF2) Sintafied Layers (A10) (LRR P, T, U) Depleted Dark Surface (F7) Red Parent Material (TF2) Mucky Mineral (A1) Red/Darent Material (TF2) Mart (F10) (LRR V, U) 2 orn Muck (A9) (LRR P, T, U) 2 orneat Material (TF2) Depleted Dark Surface (F7) Red/Darent Material (TF2) Sandy Muck (A9) (LRR P, T, U) 2 orneat Material (TF2) 3 andicators of hydrophytic vegetation and wetland hydrology muste persent. Unloady Muck (A9)
4 to 20 10YR 5 / 2 100 70 CS M SANDY CLAY 70% particles masked with organic 'Type: C=Concentration, D=Depletion, RM=Reduced Markix, CS=Covered or Coated Sand Grains. 2 Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: Polyvalue Below Surface (S8) (LRR S, T, U) Indicators for Problematic Hydric Soils: ³ Histosol (A1) Thin Dark Surface (S9) (LRR S, T, U) 1 cm Muck (A9) (LRR 0) 2 cm Muck (A10) (LRR 0) Black Histic (A3) Loamy Mucky Mineral (F1) (LRR 0) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outside MLRA 150A,B) Organic Bodies (A6) (LRR P, T, U) Depleted Matrix (F2) Reduced Vertic (F19) (URR P, S, T) Anomalous Bright Loamy Soils (F20) (MLRA 150A,B) Stratified Layers (A5) Depleted Dark Surface (F7) Red Parent Material (TF2) Red Parent Material (TF2) (LRR T, U) Muck Presence (A8) (LRR V) Reduced Vertic (F11) (MLRA 151) Other (Explain in Remarks) ³ Tork bards Surface (A11) Depleted Obric (F11) (MLRA 150A, 150B) ³ Indicators of hydrophylic vegetation and wetland hydrologhylic vegetation and wetland hydrophylic vegetati
introduction introduction <td< td=""></td<>
Hydric Soil Indicators: Polyvatue Below Surface (S8) (LRR S, T, U) Indicators for Problematic Hydric Soils: ³ Histosol (A1) Thin Dark Surface (S9) (LRR S, T, U) 1 cm Muck (A9) (LRR O) Black Histic (A2) Loamy Mucky Mineral (F1) (LRR O) 2 cm Muck (A0) (LRR S) Black Histic (A3) Loamy Gleyed Matrix (F2) Reduced Vertic (F18) (outside MLRA 150A, B) Organic Bodies (A6) (LRR P, T, U) Redox Dark Surface (F6) Mucky Mineral (A7) (LRR P, T, U) Organic Bodies (A6) (LRR P, T, U) Redox Depressions (F8) Very Shallow Dark Surface (F7) Muck A9 (LRR P, T, U) Redox Depressions (F8) Very Shallow Dark Surface (TF12) (LRR T, U) Depleted Below Dark Surface (A11) Depleted Ochric (F11) (MLRA 151) 3 Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) (LRR O, S) Detato Chric (F17) (MLRA 150A, 150B) 3 Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Gleyed Matrix (S6) Piedmont Floodplain Soils (F19) (MLRA 149A) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) Restrictive Layer (if observed): Type: Piedmont Floodplain Soils (F19) (MLRA 149A, 153C, 153D) Remarks: Hydric Soil Present? Yes X No
Imate ators with a constraint of the second sec
Institute Epipedon (A2) Loamy Mucky Mineral (F1) (LRR 0) 2 cm Muck (A10) (LRR S) Black Histic (A3) Loamy Gleyed Matrix (F2) Reduced Vertic (F18) (outside MLRA 150A,B) Y Hydrogen Sulfide (A4) Depleted Matrix (F3) Piedmont Floodplain Soils (F19) (LRR P, S, T) Organic Bodies (A6) (LRR P, T, U) Redox Dark Surface (F6) (MLRA 153B) Organic Bodies (A6) (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) (LRR T, U) Depleted Below Dark Surface (A11) Depleted Ochric (F11) (MLRA 151) Other (Explain in Remarks) Depleted Matrix (S4) Depleta Ochric (F13) (LRR O, P, T) unless disturbed or problematic. Sandy Mucky Mineral (S1) (LRR O, S) Umbric Surface (F13) (LRR P, T, U) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S5) Piedmont Floodplain Soils (F19) (MLRA 150A) Inorn-Manganese Masses (F20) (MLRA 149A) Stripped Matrix (S6) Piedmont Floodplain Soils (F19) (MLRA 149A) Anomalous Bright Leamy Soils (F20) (MLRA 149A, 153C, 153D) Restrictive Layer (if observed): Type: Loamy Soils (F20) (MLRA 149A, 153C, 153D) Remarks: Hydric Soil Present?
Black Histic (A3) Loamy Gleyed Matrix (F2) Reduced Vertic (F18) (outside MLRA 150A,B) Y Hydrogen Sulfide (A4) Depleted Matrix (F3) Piedmont Floodplain Soils (F19) (LRR P, S, T) Stratified Layers (A5) Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) (MLRA 153B) Stratified Layers (A5) Depleted Dark Surface (F6) (MLRA 153B) Muck Presence (A8) (LRR P, T, U) Depleted Dark Surface (F7) Red Parent Material (TF2) Muck AP resence (A8) (LRR P, T) Mad (F10) (LRR U) Red vertic (F11) (MLRA 151) Depleted Below Dark Surface (A12) Depleted Ochric (F11) (MLRA 151) Other (Explain in Remarks) Coast Praine Redox (A16) (MLRA 150A) Iron-Manganese Masses (F12) (LRR O, P, T) alndicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) (LRR O, S) Delta Ochric (F17) (MLRA 150A) anomalous Bright Loamy Soils (F20) (MLRA 149A) Dark Surface (S5) Reduced Vertic (F18) (MLRA 150A, 150B) meass disturbed or problematic. Stripped Matrix (S6) Piedmont Floodplain Soils (F19) (MLRA 149A, 153C, 153D) Restrictive Layer (if observed): Type: Piedmont Floodplain Soils (F20) (MLRA 149A, 153C, 153D) Remarks: Hydric Soil Present? Yes X No </td
Multice (A4) Depleted Matrix (F3) Piedmont Floodplain Soils (F19) (LRR P, S, T) Stratified Layers (A5) Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) (MLR P, S, T) Organic Bodies (A6) (LRR P, T, U) Redox Dark Surface (F6) (MLR A 153B) Stratified Layers (A5) Depleted Dark Surface (F7) Red Parent Material (TF2) Muck Presence (A8) (LRR U) Redox Depressions (F8) Very Shallow Dark Surface (TF12) (LRR T, U) Depleted Below Dark Surface (A11) Depleted Ochric (F11) (MLRA 151) Other (Explain in Remarks) Coast Prairie Redox (A16) (MLRA 150A) Iron-Manganese Masses (F12) (LRR O, P, T) al indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) (LRR O, S) Umbric Surface (F13) (LRR P, T, U) 3 and Redox Visit (S6) Piedmont Floodplain Soils (F19) (MLRA 150A, 150B) Stripped Matrix (S4) Delta Ochric (F17) (MLRA 150A, 150B) Piedmont Floodplain Soils (F20) (MLRA 149A) anomalous Bright Loamy Soils (F20) (MLRA 149A) Dark Surface (S7) (LRR P, S, T, U) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) Yes X Memory Explanation Piedmont Floodplain Soils (F20) (MLRA 149A, 153C, 153D) Yes X No
Stratified Layers (A5) Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) (MLRA 153B) Organic Bodies (A6) (LRR P, T, U) Redox Dark Surface (F7) Red Parent Material (TF2) Muck Presence (A8) (LRR U) Redox Depressions (F8) Very Shallow Dark Surface (F12) (LRR T, U) Depleted Below Dark Surface (A11) Depleted Ochric (F11) (MLRA 151) Other (Explain in Remarks) Stady Mucky Mineral (S1) (LRR O, S) Iron-Manganese Masses (F12) (LRR O, P, T) anomalous Bright Loamy Soils (F20) (MLRA 150A) Sandy Mucky Mineral (S1) (LRR O, S) Umbric Surface (F13) (LRR P, T, U) 3 Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) (LRR O, S) Delta Ochric (F17) (MLRA 150A) anomalous Bright Loamy Soils (F20) (MLRA 149A) Sandy Redox (S5) Reduced Vertic (F18) (MLRA 150A, 150B) reduced Vertic (F19) (MLRA 149A) Dark Surface (S7) (LRR P, S, T, U) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) Yes Type: Depth (inches): Yes X No
Organic Bodies (A6) (LRR P, T, U) Redox Dark Surface (F6) (MLRA 153B) S 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) (LRR T, U) Depleted Below Dark Surface (A11) Depleted Ochric (F11) (MLRA 151) Other (Explain in Remarks) Thick Dark Surface (A12) Iron-Manganese Masses (F12) (LRR O, P, T) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) (LRR O, S) Umbric Surface (F13) (LRR P, T, U) 3 Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Gleyed Matrix (S4) Delta Ochric (F17) (MLRA 150A) Iron-Manganese Masses (F12) (LRR O, P, T) Sandy Redox (S5) Reduced Vertic (F18) (MLRA 150A, 150B) Inless disturbed or problematic. Stripped Matrix (S6) Piedmont Floodplain Soils (F19) (MLRA 149A) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) Restrictive Layer (if observed): Type:
⁶ 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) (LRR T, U) 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) Other (Explain in Remarks) Coast Prairie Redox (A16) (MLRA 150A) Iron-Manganese Masses (F12) (LRR O, P, T) a Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) (LRR O, S) Umbric Surface (F13) (LRR P, T, U) a stripped Matrix (S4) Delta Ochric (F17) (MLRA 150A) Sandy Redox (S5) Reduced Vertic (F18) (MLRA 150A, 150B) Fiedmont Floodplain Soils (F20) (MLRA 149A) a nomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) Restrictive Layer (if observed): Type: Performation: Yes X No Remarks: Remarks: Present? Yes X No
Muck Presence (A8) (LRR U) Redox Depressions (F8) Very Shallow Dark Surface (TF12) (LRR T, U) 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) Other (Explain in Remarks) Thick Dark Surface (A12) Iron-Manganese Masses (F12) (LRR O, P, T) and indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) (LRR O, S) Umbric Surface (F13) (LRR P, T, U) and results of the state of the sta
Image: Main (P10) (LRK 0) Image: Main (P10) (LRK 0) Image: Main (P10) (LRK 0) Image: Masses (P12) (LRK 0) Image: Main (P10) (LRK 0) Image: Masses (P12) (LRK 0, P, T) Image: Masses (P12) (LRR 0, P, T) Image: Masses (P12) (LRR 0, P, T) Image: Masses (P12) (LRR 0, P, T) Image: Masses (P12) (LRR 0, P, T) Image: Masses (P12) (LRR 0, P, T) Image: Masses (P12) (LRR 0, P, T) Image: Masses (P12) (LRR 0, S) Image: Masses (P12) (LRR 0, P, T) Image: Masses (P12) (LRR 0, S) Image: Masses (P12) (LRR 0, P, T) Image: Masses (P12) (LRR 0, S) Image: Masses (P12) (LRR 0, P, T) Image: Masses (P12) (LRR 0, S) Image: Masses (P12) (LRR 0, P, T) Image: Masses (P12) (LRR 0, S) Image: Masses (P12) (LRR 0, P, T) Image: Masses (P12) (LRR 0, S) Image: Masses (P12) (LRR 0, P, T) Image: Masses (P12) (Masses (P13) (MLRA 151) Image: Masses (P12) (MLRA 150A, 150B) Stripped Matrix (S6) Image: Piedmont Floodplain Soils (F19) (MLRA 149A, 153C, 153D) Image: Masses (S7) (LRR P, S, T, U) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) Image: Masses (Masses (Mas
Depleted Below Dark Surface (A11) Depleted Ochric (F11) (MLRA 151) 3 Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Coast Prairie Redox (A16) (MLRA 150A) Iron-Manganese Masses (F12) (LRR O, P, T) a Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) (LRR O, S) Umbric Surface (F13) (LRR P, T, U) a a Sandy Gleyed Matrix (S4) Delta Ochric (F17) (MLRA 151) a a Sandy Redox (S5) Reduced Vertic (F18) (MLRA 150A, 150B) a a Stripped Matrix (S6) Piedmont Floodplain Soils (F19) (MLRA 149A) a a Dark Surface (S7) (LRR P, S, T, U) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) a a Type:
Thick Dark Surface (A12) Iron-Manganese Masses (F12) (LRR O, P, T) Indicators of inside operation and weithind hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) (LRR O, S) Umbric Surface (F13) (LRR P, T, U) Indicators of inside operation. Sandy Gleyed Matrix (S4) Delta Ochric (F17) (MLRA 151) Indicators of inside operation. Sandy Redox (S5) Reduced Vertic (F18) (MLRA 150A, 150B) Indicators of inside operation. Stripped Matrix (S6) Piedmont Floodplain Soils (F19) (MLRA 149A) Indicators of inside operation. Dark Surface (S7) (LRR P, S, T, U) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) Image: Type:
Coast Prairie Redox (A16) (MLRA 150A) Inon-Maniganese Masses (F12) (LRR O, P, T) unless disturbed or problematic. Sandy Mucky Mineral (S1) (LRR O, S) Umbric Surface (F13) (LRR P, T, U) unless disturbed or problematic. Sandy Gleyed Matrix (S4) Delta Ochric (F17) (MLRA 151) Reduced Vertic (F18) (MLRA 150A, 150B) Stripped Matrix (S6) Piedmont Floodplain Soils (F19) (MLRA 149A) Dark Surface (S7) (LRR P, S, T, U) Anomalous Bright Loarny Soils (F20) (MLRA 149A, 153C, 153D) Restrictive Layer (if observed): Type: Depth (inches): Yes Remarks: Yes
Sandy Midexy Mineral (BT) (LIKK 0, 0) Delta Ochric (F17) (MLRA 151) Sandy Gleyed Matrix (S4) Delta Ochric (F17) (MLRA 150) Stripped Matrix (S6) Piedmont Floodplain Soils (F19) (MLRA 149A) Dark Surface (S7) (LRR P, S, T, U) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) Restrictive Layer (if observed): Type: Type: Depth (inches): Remarks: Yes
Sandy Redox (S5) Reduced Vertic (F18) (MLRA 150A, 150B) Stripped Matrix (S6) Piedmont Floodplain Soils (F19) (MLRA 149A) Dark Surface (S7) (LRR P, S, T, U) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) Restrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes X Remarks: Yes
Stripped Matrix (S6) Piedmont Floodplain Soils (F19) (MLRA 149A) Dark Surface (S7) (LRR P, S, T, U) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) Restrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes Remarks: Yes
Dark Surface (S7) (LRR P, S, T, U) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) Restrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes X No
Anomalous Bright Loamy Soils (P20) (MLRA 149A, 153C, 153D) Restrictive Layer (if observed): Type: Depth (inches): Remarks:
Type: Hydric Soil Present? Yes X No Depth (inches):
Depth (inches): Hydric Soil Present? Yes X No Remarks: Image: Constraint of the second s
Remarks:
Hydric soil indicators present



Applicant/Owner: Ocean Wind - Holtec Property State: NJ Sampling Point: WL-C-UP Investigators: Zak Lehmann Jaclyn 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: 39.810631 Long: -74.201509 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 time of year? Yes X No (If No, explain in Remarks) Are Vegetation
Landform (hillslope, terrace, etc.): Level Local Relief (concave, convex, none): None Slope(%) 0 Subregion (LRRor MLRA): LRR T Lat: 39.810631 Long: -74.201509 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 time of year? Yes X No (If No, explain in Remarks) Are Vegetation
Subregion (LRRor MLRA): LRR T Lat: 39.810631 Long: -74.201509 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 time of year? Yes X No (If No, explain in Remarks) Are Vegetation
Soil Map Unit Name: Psamments, 0-2% 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
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If No, explain in Remarks) Are Vegetation
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, etc. Hydrophytic Vegetation Present? Yes No _X Hydric Soil Present? Yes No _X Wetland Hydrology Present? Yes No _X Remarks: Yes No _X
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, etc. Hydrophytic Vegetation Present? YesNoX Hydric Soil Present? YesNoX Wetland Hydrology Present? YesNoX Remarks: YesNoX
SUMMARY OF FINDINGS - Attach a site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes No X Hydric Soil Present? Yes No X Wetland Hydrology Present? Yes No X Remarks: Kemarks: Kemarks: Kemarks:
Hydrophytic Vegetation Present? Yes No X Hydric Soil Present? Yes No X Wetland Hydrology Present? Yes No X Remarks: Is the Sampled Area within a Wetland? Yes No X
Hydric Soil Present? Yes No X Wetland Hydrology Present? Yes No X Remarks: Is the Sampled Area within a Wetland? Yes No
Hydric Soil Present? Yes No X Wetland Hydrology Present? Yes No X Remarks: Is the Sampled Area within a Wetland? Yes No
Wetland Hydrology Present? Yes No X Remarks: Yes No X
HYDROLOGY
Wetland Hydrology Indicators: Secondary Indicators (minimum of two required) Primary Indicators (minimum of one in required) shoeld all that apply) 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)

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 Ima Water-Stained Leaves (B9)	agery (B7)		Ma Hyc Oxi Oxi Pre Rec Thi	uatic Fauna (B13) rl Deposits (B15) (LRR U) drogen Sulfide Odor (C1) dized Rhizospheres along Living Roots (C3) esence of Reduced Iron (C4) cent Iron Reduction in Tilled Soils (C6) in Muck Surface (C7) ner (Explain in Remarks)	 Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (C2) 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)
Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (stream ga	Yes Yes Yes uge, monitor	No No No	X X X	Depth (inches): Depth (inches): Depth (inches): s, previous inspections), if available:	Wetland Hydrology Present? Yes No_X
Remarks: No wetland hydrology present					



				Absolute	Dominant_	Indicator	Dominance Test V	Norkehoot			
				<u>% Cover</u>	Species	<u>Status</u>					
ree Stratum	(Plot size:	30 Ft)				Number of Domina That Are OBL, FA	CW, or FA	2:	3	(/
Juniperus virginian	a			10	Y	FACU		,			
Prunus serotina				5	Y	FACU	Total Number of Do			_	
				15	=Total Cover		 Species Across all 	Strata:		7	(E
hrub Stratum	(Plot size:	30 Ft)				Percent of Domina	nt Species		40.00/	/ A
Myrica pensylvanic	•	3011	/	50	Y	FAC	That Are OBL, FAC		:	42.9%	(A
Rhus copallinum				40	Y	UPL	Prevalence Index	Worksheet	t:		
				90	=Total Cover		Total % Cover			oly by:	
erb Stratum		C F +	1					0	x 1 =	0	
	(Plot size:	6 Ft)	4	V	FAC	OBL species				
Mollugo verticillata				1	Y	FAC	FACW species	1	x 2 =	2	
Osmundastrum cin	namomeum			1	Y	FACW	FAC species	51	x 3 =	153	
				2	=Total Cover		FACU species	100	x 4 =	400	
ine Stratum	(Plot size:	30 Ft)				UPL species	40	x 5 =	200	
Rubus idaeus				80	Y	FACU		192	(A)	755	(E
Parthenocissus qu	inquefolia			5	N	FACU	Column Totals:	102	(~)	100	(1
				85	=Total Cover		Prevalence li	ndex = B/A:	=	3.93	
							Hydrophytic Veget				
							1 - Rapid Test	for Hydroph	iytic Veg	getation	
								• •			
							2 - Dominance	Test > 50%	, 0		
							2 - Dominance 3 - Prevalence				
								Index ≤ 3.0)	on (Ex	
							3 - Prevalence	Index ≤ 3.0 ydrophytic ∖ oil and wetlar	/egetatio	gy must	
							3 - Prevalence Problematic Hy Indicators of hydric so	Index ≤ 3.0 ydrophytic \ oil and wetlar sturbed or pro	/egetatio d hydrolo oblematic	gy must	
							3 - Prevalence Problematic Hy Indicators of hydric so be present, unless di	Index \leq 3.0 ydrophytic \ oil and wetlar sturbed or pro- tation Strat s, excluding 6 m) or moi	/egetation d hydrolo bblematic t a: woody v re in heig	gy must vines, ght and	plai
							3 - Prevalence Problematic Hy Indicators of hydric so be present, unless di Definitions of Vege Tree – Woody plants approximately 20 ft (Index \leq 3.0 ydrophytic \ oil and wetlar sturbed or pro- tation Strat s, excluding 6 m) or mon diameter at unts, excludi 6 m) or mon	/egetatio d hydrolo bblematic ta: woody v re in heig breast h ng wood	yines, ght and neight (I	olai 3 ir DBH
							3 - Prevalence Problematic Hy Indicators of hydric so be present, unless di Definitions of Vege Tree – Woody plants approximately 20 ft ((7.6 cm) or larger in of Sapling – Woody pla approximately 20 ft (Index \leq 3.0 ydrophytic N oil and wetlar sturbed or pro- tation Strat s, excluding 6 m) or mou diameter at onts, excludi 6 m) or mou BH. ts, excludin	/egetatic oblematic oblematic ta: woody v e in heig breast f ng woody e in heig g woody	yines, ght and height (I dy vines ght and v vines,	olai 3 ir DBH
							3 - Prevalence Problematic Hy Indicators of hydric so be present, unless di Definitions of Vege Tree – Woody plants approximately 20 ft ((7.6 cm) or larger in of Sapling – Woody plan approximately 20 ft (than 3 in. (7.6 cm) D Shrub – Woody plan	Index \leq 3.0 ydrophytic N oil and wetlar <u>sturbed or pro-</u> tation Stra 6, excluding 6 m) or mou diameter at ants, excludi 6 m) or mou BH. ts, excludin 0 ft (1 to 6 r us (non-woo egardless of	/egetatio d hydrolo bblematic bblematic ta: woody v e in heig breast h ng woody re in heig g woody n) in hei	yines, ght and height (I dy vines ght and vines, ght. hts, inclucion	3 ir 3 ir DBH , les:
							3 - Prevalence Problematic Hy Indicators of hydric sc be present, unless di Definitions of Vege Tree – Woody plants approximately 20 ft ((7.6 cm) or larger in or Sapling – Woody plan approximately 20 ft (than 3 in. (7.6 cm) D Shrub – Woody plan approximately 3 to 20 Herb – All herbaceou herbaceous vines, re plants, except woody	Index ≤ 3.0 ydrophytic \ oil and wetlar <u>sturbed or pro</u> tation Stra s, excluding 6 m) or mou diameter at unts, excludi 6 m) or mou BH. ts, excludin 0 ft (1 to 6 r us (non-woo gardless of y vines, less	/egetatio d hydrolo bblematic ta: woody v e in heig breast f ng woody n) in hei dy) plar size. In than ap	yines, ght and height (I dy vines ght and vines, ght. dts, inclu cludes oproxim	3 ir DBH , les:

Remarks: (Include photo numbers here or on a separate sheet.)

No hydric vegetation dominance



	ption: (Describe to t Matrix	he depth no	eeded to document		l <mark>icator or</mark> Features	confirm	n the absence of Indicators.)	
Depth (inches)	Color (moist)	%	Color (moist)	%	Type ¹	L oc 2	Texture	Remarks
0 to 20	10YR 5/1	60	10YR2/1	40	C	M	SAND	
0 10 20	10TK 571	00	101R2/1	40	<u> </u>			
¹ Type: C=Cond	centration, D=Depletio	on, RM=Red	luced Martix, CS=Co	overed o	r Coated	Sand Gra	ains. ² Location: PL=Pore Linin	g, M=Matrix.
Hydric Soil Ir Histosol (A1 Histic Epipe Black Histic) don (A2)		 Polyvalue Below S Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Ma 	e (S9) (LR neral (F1)	R S, T, U)	T, U)	Indicators for Problematic H	
		U)	Depleted Matrix (F Redox Dark Surfa Depleted Dark Surfa	=3) ace (F6))		 Piedmont Floodplain Soils (F1 Anomalous Bright Loamy Soil (MLRA 153B) Red Parent Material (TF2) 	19) (LRR P, S, T)
1 cm Muck (Depleted Be	nce (A8) (LRR U) (A9) (LRR P, T) elow Dark Surface (A11)		 Redox Depression Marl (F10) (LRR U Depleted Ochric ())	RA 151)		Very Shallow Dark Surface (T Other (Explain in Remarks) ³ Indicators of hydrophytic ve	
Coast Prairie	Surface (A12) e Redox (A16) (MLRA 15 cy Mineral (S1) (LRR O, 5 ed Matrix (S4)	,	Iron-Manganese M Umbric Surface (F Delta Ochric (F17 Reduced Vertic (F	=13) (LRR) (MLRA 1	2 P, T, U) 151)	-	hydrology must be present unless disturbed or probler	,
Stripped Ma Dark Surfac	trix (S6) e (S7) (LRR P, S, T, U)		Reduced Vertic (F Piedmont Floodpl Anomalous Bright	ain Soils ((F19) (MLR	A 149A)	9A, 153C, 153D)	
Type: Depth (inche	ve Layer (if observ	ved):					Hydric Soil Present?	Yes No X
Remarks:								
Remarks: No hydric soils								

Project/Site: Orsted		City/County: O	cean County Sampling Date: 5/5	5/2020
Applicant/Owner: Ocean Wind - Holtec	Property		State: NJ Sampling Point: WL	
Investigators: Stephen Seymour	Jaclyn Chap	man Se	ection, Township, Range S T Lacey	R
	Hillslope		· · · · · ·	Slope(%) 5
Subregion (LRRor MLRA): LRR T	Lat: 39.8		ong: -74.200654 Datum: W	
• · · · ·			NWI Classification: Not mapped	
Soil Map Unit Name: Psamments, 0-2%	•			
Are climatic / hydrologic conditions on the s		•	No (If No, explain in Remarks)	
Are Vegetation, Soil, Hydrold		-	e "Normal Circumstances" present? Yes	X No
Are Vegetation, Soil, Hydrold	ogy, naturally p	roblematic? (I	If needed, explain any answers in Remarks.)	
SUMMARY OF FINDINGS - Attac	<u>h a site map sho</u>	owing sampling point	locations, transects, important fea	atures, etc.
Hydrophytic Vegetation Present? Yes	X No			
Hydric Soil Present? Yes	X No	Is the Sampled Area		
Wetland Hydrology Present? Yes		within a Wetland?	Yes X No	
Remarks:				
30' south of wetland discharge to Oyster C	reek. Area is a wetlar	nd due to presence of hydrop	hytic vegetation, hydric soils, and wetland hyd	Irology
HYDROLOGY				
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requestion) Surface Water (A1) High Water Table (A2)	Aquatic F	Fauna (B13)	Secondary Indicators (minimum of Surface Soil Cracks (B6) Sparsely Vegetated Concave Sur Drainage Patterns (B10)	
Saturation (A3)		oosits (B15) (LRR U)	Moss Trim Lines (B16)	
Water Marks (B1)	_ ` `	n Sulfide Odor (C1) Rhizospheres along Living Roots		
Sediment Deposits (B2)		e of Reduced Iron (C4)	Crayfish Burrows (C8)	
Drift Deposits (B3)	_	on Reduction in Tilled Soils (C6)	Saturation Visible on Aerial Imag	.(C9)
Algal Mat or Crust (B4)		ck Surface (C7)	Geomorphic Position (D2)	
Iron Deposits (B5)	Other (E	xplain 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		oth (inches):	_	
Water Table Present? Yes X		oth (inches): Surface	Wetland Hydrology Present? Yes	X No
Saturation Present? Yes X (includes capillary fringe)	No Dep	oth (inches): Surface		
Describe Recorded Data (stream gauge, monitorin	g well, aerial photos, prev	vious inspections), if available:		
Remarks:				
Wetland hydrology present				



Sampling Point: WL-C-WET

				<u>Absolute</u> <u>% Cover</u>	<u>Dominant</u> Species	Indicator Status	Dominance Test Workshee	et:		
Tree Stratum	(Plot size:	30 Ft	_)				Number of Dominant Specie That Are OBL, FACW, or F/		5	(
Acer rubrum				60	Y	FAC				-
				60	=Total Cover		Total Number of Dominant Species Across all Strata:		5	(
<u>Shrub Stratum</u> Clethra alnifolia	(Plot size:	30 Ft	_)	70	Y	FACW	Percent of Dominant Species		400.00/	_ ,
Acer rubrum				20	- <u> </u>	FAC	That Are OBL, FACW, or FA		100.0%	_ (.
				90	=Total Cover		Prevalence Index Workshe	et:		
Herb Stratum	(Plot size:	6 Ft)				Total % Cover of:	Multi	ply by:	
Phragmites austra	-	011	_ /	40	Y	FACW	OBL species 0	x 1 =	0	
Onoclea sensibilis				20	Y	FACW	FACW species 130	x 2 =	260	
				60	=Total Cover		FAC species 80	x 3 =	240	
Vine Stratum	(Plot size:	20 Et	1				FACU species 1	x 4 =	4	
Toxicodendron pul	-	3011	_ /	1	N	FACU	UPL species 0	x 5 =	0	
				1	=Total Cover		Column Totals: 211	(A)	504	
							Prevalence Index = B/		2.39	
							Hydrophytic Vegetation Ind		2.00	
							1 - Rapid Test for Hydro		netation	1
							X 2 - Dominance Test > 50		geration	
							X 3 - Prevalence Index \leq 3			
							Problematic Hydrophytic	Vegetati	on (Exp	pla
							Indicators of hydric soil and weth be present, unless disturbed or p			
							Definitions of Vegetation Str	ata:		
							Tree – Woody plants, excludin approximately 20 ft (6 m) or m (7.6 cm) or larger in diameter a	ore in hei	ght and	
							Sapling – Woody plants, exclu approximately 20 ft (6 m) or m than 3 in. (7.6 cm) DBH.			
							Shrub – Woody plants, exclud approximately 3 to 20 ft (1 to 6			
							Herb – All herbaceous (non-we herbaceous vines, regardless plants, except woody vines, les 3 ft (1 m) in height.	of size. Ir	cludes v	wc
							Woody vine – All woody vines,	regardle	ss of he	igł
							Hydrophytic Vegetation Present? Ye	es X	_No	
marks: (Include photo	numbers her	re or on a s	eparate sheet.)							



	ription: (Des	cribe to the Matrix	depth ne	eded to documen		l icator or Features	confirm	the absence of Indicators.)	
Depth (inches)	Colo	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
¹ Type: C=Con	centration, I	D=Depletion,	RM=Redu	uced Martix, CS=Co	overed o	r Coated S	Sand Gra	ains. ² Location: PL=Pore L	ning, M=Matrix.
5 cm Muck	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)		 Polyvalue Below Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Matrix (I Depleted Matrix (I Redox Dark Surfa Depleted Dark SL Redox Depressio Marl (F10) (LRR I 	e (S9) (LR heral (F1) atrix (F2) F3) ace (F6) urface (F7) ns (F8)	R S, T, U) (LRR O)	1, 0)	1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (our Piedmont Floodplain Soils Anomalous Bright Loamy (MLRA 153B) Red Parent Material (TF2 Very Shallow Dark Surface Other (Explain in Remark)	side MLRA 150A,B) 5 (F19) (LRR P, S, T) Soils (F20)) e (TF12) (LRR T, U)
Thick Dark Coast Prair Sandy Muc Sandy Gley Sandy Red Stripped Mac	ky Mineral (S1 yed Matrix (S4) lox (S5))) (MLRA 150A) (LRR O, S))	 	Depleted Ochric (Iron-Manganese I Umbric Surface (I Delta Ochric (F17 Reduced Vertic (F Piedmont Floodpl Anomalous Brigh	Masses (F F13) (LRR /) (MLRA ⁻ F18) (MLR lain Soils (12) (LRR C P, T, U) 151) A 150A, 15 F19) (MLR.	0B) A 149A)	hydrology must be prea unless disturbed or pro	
Restrict Type: Depth (inch		if observe	d):					Hydric Soil Present?	Yes X No
Remarks: Extensive orga	nic material fo	und within the	first 9 in of t	he soil profile. Hydric	soils prese	ent 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: Ocean Wind - JCP&L Property	State: NJ Sampling Point: WL-D-UP
Investigators: Zak Lehmann Jaclyn Cha	pman 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: 39.8	B10493 Long: -74.200617 Datum: WGS 1984
Soil Map Unit Name: Manahawkin muck, 0-2% slopes, frequ	ently flooded NWI Classification: Not mapped
Are climatic / hydrologic conditions on the site typical for this tim	e of year? Yes X No (If No, explain in Remarks)
Are Vegetation, Soil, Hydrology, significan	tly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, Hydrology, naturally	
SUMMARY OF FINDINGS - Attach a site map sh	owing sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X No	
Hydric Soil Present? Yes No X	Is the Sampled Area
Wetland Hydrology Present? Yes No X	within a Wetland? Yes <u>No X</u>
High Water Table (A2) Marl De Saturation (A3) Hydroge Water Marks (B1) Oxidized	Fauna (B13) Sparsely Vegetated Concave Surface (B8) eposits (B15) (LRR U) Drainage Patterns (B10) en Sulfide Odor (C1) Moss Trim Lines (B16) d Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2)
	ce of Reduced Iron (C4) Crayfish Burrows (C8) Iron Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imag.(C9)
	Ick Surface (C7)
	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:	
	pth (inches):
	epth (inches): Wetland Hydrology Present? Yes No_X_
	pth (inches): Wetland Hydrology Present? fes No_X_
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, pro	evious inspections), if available:
Remarks:	
No wetland hydrology present	
······	



Sampling Point: WL-D-UP

		<u>Absolute</u> % Cover		Indicator Status	Dominance Test Worksheet:		
Tree Stratum	(Plot size: 30 Ft	<u></u>			Number of Dominant Species	n	(A
Juniperus virgin	· /	20	Y	FACU	That Are OBL, FACW, or FAC:	2	_ (/
		20			Total Number of Dominant		
Shrub Stratum					Species Across all Strata:	5	(B
	(Plot size: <u>30 Ft</u>)	5	Y	FACU	Percent of Dominant Species		
Juniperus virgin Myrica pensylva		5		FACU	That Are OBL, FACW, or FAC:	40.0%	(A
Acer rubrum	TICA	3	N	FAC	Prevalence Index Worksheet:		
Pinus rigida		1	N	FACU		14	
		12			0	ltiply by: = 0	
Herb Stratum							
	(Plot size: <u>6 Ft</u>)	00	V		FACW species 70 x 2		
Phragmites aus		60		FACW	FAC species 7 x 3		
Solidago sempe Polygonum ach		10	N	FACW	FACU species 27 x 4	= 108	
	orouni	71			UPL species 0 x 5	= 0	
ling Strature			=Total Cover		Column Totals: 104 (A)	269	(
/ine Stratum	(Plot size: <u>30 Ft</u>						
Rubus idaeus		1	Y	FACU	Prevalence Index = B/A=	2.59	
		1	=Total Cover		Hydrophytic Vegetation Indicators		
					1 - Rapid Test for Hydrophytic \		
						egetation	
					2 - Dominance Test > 50%		
					X 3 - Prevalence Index \leq 3.0		
					Problematic Hydrophytic Vegeta	ation (Ex	plai
					Indicators of hydric soil and wetland hydri be present, unless disturbed or problema	ology must	•
					Definitions of Vegetation Strata:		
					Tree – Woody plants, excluding wood approximately 20 ft (6 m) or more in h (7.6 cm) or larger in diameter at breas	eight and	3 ir DB⊦
					Sapling – Woody plants, excluding wo approximately 20 ft (6 m) or more in h than 3 in. (7.6 cm) DBH.		
					Shrub – Woody plants, excluding woo approximately 3 to 20 ft (1 to 6 m) in h		
					Herb – All herbaceous (non-woody) p herbaceous vines, regardless of size. plants, except woody vines, less than 3 ft (1 m) in height.	Includes	woo
					Woody vine – All woody vines, regard	lless of he	ight
					Hydrophytic Vegetation Present? Yes X	No	
narks: (Include pho	to numbers here or on a sep	rate sheet.)					



Dopth Matrix	-			••••••	he absence of Indicators.)	
		Redox F				
(inches) Color (moist)	% Color (moist) %	Type ¹	Loc ²	Texture	Remarks
0 to 10 10YR 4/3					SANDY LOAM	
¹ Type: C=Concentration, D=Depletion,	RM=Reduced Martix	, CS=Covered or	Coated Sa	and Grai	ns. ² Location: PL=Pore Lining,	, M=Matrix.
Hydric Soil Indicators:	Polvvalu	ie Below Surface (S	8) (LRR S. T	. U)	Indicators for Problematic Hy	dric Soils: ³
Histosol (A1)		rk Surface (S9) (LRF		, ,	1 cm Muck (A9) (LRR O)	
Histic Epipedon (A2)		Mucky Mineral (F1) (2 cm Muck (A10) (LRR S)	
Black Histic (A3)	Loamy (Gleyed Matrix (F2)			Reduced Vertic (F18) (outside N	MLRA 150A,B)
Stratified Layers (A5)	Deplete	d Matrix (F3)			Piedmont Floodplain Soils (F19) (LRR P, S, T)
Organic Bodies (A6) (LRR P, T, U)		Dark Surface (F6)			Anomalous Bright Loamy Soils	(F20)
\Box 5 cm Mucky Mineral (A7) (LRR P, T, U)		d Dark Surface (F7)			(MLRA 153B)	
Muck Presence (A8) (LRR U)		Depressions (F8)			Red Parent Material (TF2) Very Shallow Dark Surface (TF	12) (LRR T 11)
1 cm Muck (A9) (LRR P, T)		0) (LRR U)			Other (Explain in Remarks)	12)(ERR(1, 0)
Depleted Below Dark Surface (A11)		d Ochric (F11) (MLR	Δ 151)			
Thick Dark Surface (A12)		nganese Masses (F1	,	р т)	³ Indicators of hydrophytic veg hydrology must be present,	etation and wetland
Coast Prairie Redox (A16) (MLRA 150A		Surface (F13) (LRR	,,	F, I)	unless disturbed or problema	atic.
Sandy Mucky Mineral (S1) (LRR O, S)		chric (F17) (MLRA 1				
Sandy Gleyed Matrix (S4)			,			
Stripped Matrix (S6)		d Vertic (F18) (MLR		,		
Dark Surface (S7) (LRR P, S, T, U)		nt Floodplain Soils (F				
	Anomal	ous Bright Loamy So	oils (F20) (M	LRA 149A	A, 153C, 153D)	
Restrictive Layer (if observed	d):					
Type: Fill Depth (inches): 10					Hydric Soil Present? Ye	es No X
Type: Fill					Hydric Soil Present? Yo	es No _X
Type: _Fill Depth (inches):10	or concretions				Hydric Soil Present? Yo	es No X
Type: Fill Depth (inches): 10 Remarks:	or concretions				Hydric Soil Present? Y	es No _X
Type: Fill Depth (inches): 10 Remarks:	or concretions				Hydric Soil Present? Y	es <u>No X</u>
Type: Fill Depth (inches): 10 Remarks:	or concretions				Hydric Soil Present? Yo	es No X
Type: Fill Depth (inches): 10 Remarks:	or concretions				Hydric Soil Present? Y	es <u>No X</u>
Type: Fill Depth (inches): 10 Remarks:	or concretions				Hydric Soil Present? Y	es No _X
Type: Fill Depth (inches): 10 Remarks:	or concretions				Hydric Soil Present? Y	es No _X
Type: Fill Depth (inches): 10 Remarks:	or concretions				Hydric Soil Present? Y	es No _X
Type: Fill Depth (inches): 10 Remarks:	or concretions				Hydric Soil Present? Y	es No _X
Type: Fill Depth (inches): 10 Remarks:	or concretions				Hydric Soil Present? Y	es No _X
Type: Fill Depth (inches): 10 Remarks:	or concretions				Hydric Soil Present? Y	es No _X
Type: Fill Depth (inches): 10 Remarks:	or concretions				Hydric Soil Present? Y	es No _X
Type: Fill Depth (inches): 10 Remarks:	or concretions				Hydric Soil Present? Y	es No _X
Type: Fill Depth (inches): 10 Remarks:	or concretions				Hydric Soil Present? Y	es No _X
Type: Fill Depth (inches): 10 Remarks:	or concretions				Hydric Soil Present? Y	es No _X
Type: Fill Depth (inches): 10 Remarks:	or concretions				Hydric Soil Present? Y	es No _X

Project/Site: Orsted	City/County: Oce	an County Sampling Date: 8/10/2020
Applicant/Owner: Ocean Wind - Holtec Property		State: NJ Sampling Point: WL-D-WET
Investigators: Zak Lehmann Jaclyn	Chapman Sect	tion, Township, Range S T Lacey R
Landform (hillslope, terrace, etc.): Toe of Slope	Local Relief (conca	ave, convex, none): Concave Slope(%) 0
Subregion (LRRor MLRA): LRR T Lat:	39.810428 Long	g: -74.200485 Datum: WGS 1984
Soil Map Unit Name: Manahawkin muck, 0 2 percent sl	opes, frequently flooded	NWI Classification: PSS1Eh
Are climatic / hydrologic conditions on the site typical for thi	s time of year? Yes X No	(If No, explain in Remarks)
Are Vegetation, Soil, Hydrology, signi	ficantly disturbed? Are "	Normal Circumstances" present? Yes X No
Are Vegetation, Soil, Hydrology, nature	ally problematic? (If n	needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach a site map		
Hydrophytic Vegetation Present? Yes X No	Is the Sampled Area	
Hydric Soil Present? Yes X No	within a Wetland?	Yes X No
Wetland Hydrology Present? Yes X No		
HYDROLOGY		
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all t	hat annly)	Secondary Indicators (minimum of two required)
✓ Surface Water (A1) □ Aq ✓ High Water Table (A2) □ Ma ✓ High Water Table (A2) □ Ma ✓ Saturation (A3) □ Hy ✓ Water Marks (B1) □ Ox □ Sediment Deposits (B2) □ Pro □ Drift Deposits (B3) □ Re □ Algal Mat or Crust (B4) □ Tr	uatic Fauna (B13) arl Deposits (B15) (LRR U) drogen Sulfide Odor (C1) idized Rhizospheres along Living Roots (C esence of Reduced Iron (C4) ecent Iron Reduction in Tilled Soils (C6) in Muck Surface (C7) her (Explain in Remarks)	 Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imag.(C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Sphagnum moss (D8) (LRR T,U)
Field Observations:		
Surface Water Present? Yes X No	Depth (inches): 2	

Water Table Present? Saturation Present?

Depth (inches): Wetland Hydrology Present? Yes X No.

(includes capillary fringe)

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

No

No

Х

Х

Yes

Yes

Remarks:

Standing water in the soil pit location; wetland hydrology present



Depth (inches):

Sampling Point: WL-D-WET

	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksh	eet:		
Tree Stratum				Number of Dominant Spe That Are OBL, FACW, or		1	(4
Shrub Stratum							
Herb Stratum (Plot size: 6 Ft)				Total Number of Dominant Species Across all Strata:		1	(
Phragmites australis	100	Y	FACW			•	_ (•
Vine Stratum	100	=Total Cover		Percent of Dominant Spec That Are OBL, FACW, or I		100.0%	(/
				Prevalence Index Works	neet:		
				Total % Cover of:		iply by:	
				OBL species 0	x 1 =		
				FACW species 100			
				FAC species 0	x 3 =		
				FACU species 0	x 4 =		
				UPL species 0	x 5 =	0	
				Column Totals: 100) (A)	200	
				Prevalence Index =	B/A=	2.00	
				Hydrophytic Vegetation Ir	dicators:		
				1 - Rapid Test for Hyd		egetation	
				X 2 - Dominance Test >			
				X 3 - Prevalence Index ≤			
				Problematic Hydrophy Indicators of hydric soil and w	-		
				be present, unless disturbed of			
				Definitions of Vegetation S			
				Tree – Woody plants, exclud approximately 20 ft (6 m) or (7.6 cm) or larger in diameter	more in he	eight and	
				Sapling – Woody plants, exc approximately 20 ft (6 m) or than 3 in. (7.6 cm) DBH.			
				Shrub – Woody plants, exclu approximately 3 to 20 ft (1 to			
				Herb – All herbaceous (non- herbaceous vines, regardles plants, except woody vines, 3 ft (1 m) in height.	s of size. I	ncludes \	wo
				Woody vine – All woody vine	es, regardl	ess of he	igł
				Hydrophytic Vegetation Present?	Yes X	No	
marks: (Include photo numbers here or on a separate shee	t.)						
ydrophytic vegetation present							



	iption: (Des		depth nee	eded to document		licator or Features	confirm	the absence of Indicators.)	
Depth (inches)	Color		%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 8	Color (moist) 8 10YR 2 / 1 20 10YR 4 / 1 20 Ceconcentration, D=Depletion Ceconcentration, D=Depletion 2 ck Histic (A3) drogen Sulfide (A4) atified Layers (A5) janic Bodies (A6) (LRR P, T, U) m Mucky Mineral (A7) (LRR P, T, U) m Muck (A9) (LRR P, T) bleted Below Dark Surface (A12) ast Prairie Redox (A16) (MLRA 1504 ndy Mucky Mineral (S1) (LRR O, S) m dy Redox (S5) pped Matrix (S6) tk Surface (S7) (LRR P, S, T, U) estrictive Layer (if observe cent cent cth (inches):	100		70	CS	М	SAND	Fibrous muck; 70% particles masked with organic	
8 to 20	10YR	4 / 1	100		70	CS	М	SAND	Fibrous muck; 70% of particles masked with organic
)=Depletion,	RM=Redu	Iced Martix, CS=Co				ains. ² Location: PL=Pore Lin Indicators for Problematic	
Black Histic Hydrogen S Stratified La Organic Bo 5 cm Muck Muck Press 1 cm Muck Depleted B Thick Dark Coast Prair Sandy Muc Sandy Red Stripped Ma	edon (A2) c (A3) Sulfide (A4) ayers (A5) dies (A6) (LRF y Mineral (A7) (ence (A8) (LRF (A9) (LRR P, 1 elow Dark Surf surface (A12) ie Redox (A16 ky Mineral (S1) red Matrix (S4) ox (S5) atrix (S6)	(LRR P, T, U) R U) T) face (A11)) (MLRA 150A) (LRR O, S)]]]]]]]]]]]]]]]]]]]	 Folyvalue Below C Thin Dark Surface Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfa Depleted Dark Surfa Depleted Dark Surfa Redox Depression Marl (F10) (LRR L Depleted Ochric (I Iron-Manganese M Umbric Surface (F Delta Ochric (F17 Reduced Vertic (F Piedmont Floodpl Anomalous Bright 	e (S9) (LR neral (F1) atrix (F2) F3) ace (F6) arface (F6) of (F6) F11) (MLR Masses (F F13) (LRR) (MLRA F18) (MLR ain Soils ((LRR O) (LRR O) (12) (LRR O (12) (LRR O (12) (LRR O (12) (LRR O (15)) (151) (151) (150A, 15 (19) (MLR/	, P, T) 0B) A 149A)	 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) ³ Indicators of hydrophytic hydrology must be prese unless disturbed or prob 	(F19) (LRR P, S, T) coils (F20) (TF12) (LRR T, U) vegetation and wetland ent,
Туре:		if observed	d):					Hydric Soil Present?	Yes X No
Remarks: Hydric soils pre	esent								



Project/Site: Orsted			City/County:	Ocean County	Sampling Date: 5/7/2020
Applicant/Owner: Ocean Wir	nd - Holtec Proper	y		State:	NJ Sampling Point: WL-E-UPL
Investigators: Stephen Seyn	nour	Jaclyn Chap	man	Section, Township	, Range S T Lacey R
Landform (hillslope, terrace, etc.)	: Road si	de	Local Relief	(concave, convex, no	one): Concave Slope(%) 5
Subregion (LRRor MLRA): LRF	R T	Lat: 39.8	08934	Long: -74.19869	6 Datum: WGS 1984
Soil Map Unit Name: Psamm	ents, 0-2% slope			NWI	Classification: None
Are climatic / hydrologic condition	ns on the site typic	al for this time	e of year? Yes X	No (If	No, explain in Remarks)
Are Vegetation, Soil	_, Hydrology	, significant	ly disturbed?	Are "Normal Circur	nstances" present? Yes X No
Are Vegetation, Soil	_, Hydrology	, naturally p	problematic?	(If needed, explai	n any answers in Remarks.)
SUMMARY OF FINDING	S - Attach a si	te man sho	owing sampling p	oint locations t	ansects, important features, etc.
		-	<u>owing ouriphing p</u>		
Hydrophytic Vegetation Presen	t? Yes	No X	Is the Sampled Ar	02	
Hydric Soil Present?	Yes	No X	within a Wetland?		es No X
Wetland Hydrology Present?	Yes	No X			
Remarks: Area is not a wetland due to no	presence of hydro	phytic vegetat	ion, hydric soils, and we	etland hydrology	
HYDROLOGY					
Wetland Hydrology Indicators				Seco	ondary Indicators (minimum of two required)
Primary Indicators (minimum of	one is required: cl	neck all that ar	(ylac		
- · · ·	, ,	look an that a	1.37		Surface Soil Cracks (B6)
Surface Water (A1)	, ,		⁻ auna (B13)		Sparsely Vegetated Concave Surface (B8)
Surface Water (A1) High Water Table (A2)		Aquatic F			Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10)
Surface Water (A1)		Aquatic F	Fauna (B13)		Sparsely Vegetated Concave Surface (B8)

Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Ima Water-Stained Leaves (B9)	ıgery (B7)	Presence of Reduced Iron (Presence of Reduced Iron (Recent Iron Reduction in Til Thin Muck Surface (C7) Other (Explain in Remarks)	Crayfish Burrows (C8)
Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (stream ga	Yes N Yes N Yes N uge, monitoring well,	lo X Depth (inches):	Wetland Hydrology Present? Yes No_X_
Remarks: No wetland hydrology present			



Sampling Point: WL-E-UPL

		<u>Absolute</u> % Cover	Dominant Species	Indicator Status	Dominance Test Work	sheet:			
Tree Stratum	(Plot size: 30 Ft)				Number of Dominant S			2	(A
Quercus palustris		30	Y	FACW	That Are OBL, FACW,	or FAC:		Z	_ (/
Pinus resinosa		20	- <u>Y</u>	FACU	Total Number of Domin	ant			
Prunus virginiana		20	Y	FACU	Species Across all Stra	ta:		9	(B
Sassafras albidum		20	Y	FACU	Dereent of Deminent St				
Acer rubrum		10	Ν	FAC	Percent of Dominant Sp That Are OBL, FACW,			22.2%	(A
		100	=Total Cover		Dreveler ee Indew Wee				
Shrub Stratum	(Plot size: 30 Ft)				Prevalence Index Wor				
Clethra alnifolia	(FIOUSIZE: <u>3011</u>)	30	Y	FACW	Total % Cover of:		Multip x 1 =	oly by: 0	
		30	=Total Cover		OBL species				
Lauk Chuatuma					FACW species	60 3	x 2 =	120	
Herb Stratum	(Plot size: <u>6 Ft</u>)				FAC species	10	x 3 =	30	
Fragaria virginiana			Y	FACU	FACU species	116	x 4 =	464	
Artemisia annua		10	Y	FACU	UPL species	0 >	x 5 =	0	
Juniperus virginian	a	10	Y	FACU		186 (/	۹)	614	(E
		40	=Total Cover		Column Totals:	100 (/	יי	014	(L
Vine Stratum	(Plot size: <u>_30 Ft</u>)				Prevalence Index	= B/A=		3.30	
Celastrus orbiculat	us	15	Y	FACU					
Parthenocissus quinquefolia	1	Ν	FACU	Hydrophytic Vegetation					
		16	=Total Cover		1 - Rapid Test for H	lydrophyt	ic Veg	etation	
					2 - Dominance Tes	t > 50%			
					3 - Prevalence Inde	ex ≤ 3.0			
					Duchlans stie Ubrehen			··· (F.	
					Problematic Hydrop	onytic ve	getatio	n (Ex	Jair
					Indicators of hydric soil an be present, unless disturb				
					Definitions of Vegetatio	on Strata:	:		
					Tree – Woody plants, exe approximately 20 ft (6 m) (7.6 cm) or larger in diam	or more	in heig	ght and	3 in)B⊦
					Sapling – Woody plants, approximately 20 ft (6 m) than 3 in. (7.6 cm) DBH.				
					Shrub – Woody plants, e approximately 3 to 20 ft (
					Herb – All herbaceous (n herbaceous vines, regard plants, except woody vine 3 ft (1 m) in height.	lless of si	ize. In	cludes	NOO
					Woody vine – All woody	vines, reg	ardles	s of he	ight
					Hydrophytic Vegetation Present?	Yes		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.



• •	escribe to the Matrix	depth ne	eded to document		icator or Features	confirm	the absence of Indicators.)	
Depth (inches) Co	olor (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 7 10YR	3/2	100			- 71 -		FINE SANDY LOAM	
7 to 20 10YR	6/8	100					COARSE SILTY SAND	10% rounded quartz pebbles
¹ Type: C=Concentration	n, D=Depletion,	RM=Red	uced Martix, CS=Cc	overed or	Coated S	and Gra	ains. ² Location: PL=Pore Lini	ng, M=Matrix.
Hydric Soil Indicators Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) (I 5 cm Mucky Mineral (A Muck Presence (A8) (I 1 cm Muck (A9) (LRR Depleted Below Dark Surface (A Coast Prairie Redox (A Sandy Mucky Mineral Sandy Gleyed Matrix (.RR P, T, U) .7) (LRR P, T, U) .RR U) P, T) Surface (A11) 12) .16) (MLRA 150A (S1) (LRR O, S))	 Polyvalue Below S Thin Dark Surface Loamy Mucky Min Loamy Gleyed Mati Depleted Matrix (F Redox Dark Surfa Depleted Dark Surfa Redox Depression Marl (F10) (LRR U Depleted Ochric (F Iron-Manganese M Umbric Surface (F Delta Ochric (F17) 	(S9) (LR eral (F1) (trix (F2) 3) ce (F6) rface (F7) ns (F8) J) F11) (MLF Aasses (F 13) (LRR	R S, T, U) LRR O) RA 151) 12) (LRR O P, T, U)		Indicators for Problematic 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outsic Piedmont Floodplain Soils (F Anomalous Bright Loamy Sc (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (Other (Explain in Remarks) ³ Indicators of hydrophytic v hydrology must be preser unless disturbed or proble	de MLRA 150A,B) F19) (LRR P, S, T) oils (F20) (TF12) (LRR T, U) vegetation and wetland nt,
Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LR	R P, S, T, U)		Reduced Vertic (F Piedmont Floodpla Anomalous Bright	ain Soils (F19) (MLRA	(149A))A, 153C, 153D)	
Restrictive Laye Type: Depth (inches): Remarks:	r (if observe	d):					Hydric Soil Present?	Yes No _ X
No hydric soils present ba	sed on soils not n	neeting any	of the hydric soil indica	ators				

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, Ran	ge_S T Lacey R
Landform (hillslope, terrace, etc.): Level	Local Relief (c	oncave, convex, none):	None Slope(%) 0
Subregion (LRRor MLRA): LRR T	at: 39.808934	Long: -74.498696	Datum: WGS 1984
Soil Map Unit Name: Manahawkin Muck, 0-2% slop	e	NWI Classi	fication: PFO4Cg
Are climatic / hydrologic conditions on the site typical for	r this time of year? Yes X	No (If No, e	xplain in Remarks)
Are Vegetation, Soil, Hydrology, s	ignificantly disturbed?	Are "Normal Circumstand	ces" present? Yes X No
Are Vegetation, Soil, Hydrology, n	aturally problematic?	(If needed, explain any	answers in Remarks.)
SUMMARY OF FINDINGS - Attach a site n Hydrophytic Vegetation Present? Yes X No Hydric Soil Present? Yes X No Wetland Hydrology Present? Yes X No Remarks: Wetland is an Atlantic white cedar swamp with a few reference Yes Yes	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)		ce Soil Cracks (B6)

Primary Indicators (minimum c	of one is r	equir	ed; ch	eck all t	hat apply)		Surface 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 Imater ✓ Water-Stained Leaves (B9)	agery (B7)			Hy Hy Ox Pre	uatic Fauna (B13) arl Deposits (B15) (LRI drogen Sulfide Odor (C idized Rhizospheres a esence of Reduced Iro ecent Iron Reduction in in Muck Surface (C7) her (Explain in Remark	C1) long Living Roots (C3 n (C4) Tilled Soils (C6)	 Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (C2) 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)
Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe)	Yes Yes Yes	X X	No No No	_X	Depth (inches): Depth (inches): Depth (inches):	To Surface To Surface	Wetland Hydrology Present? Yes X No
Describe Recorded Data (stream ga	uge, monit	oring \	vell, ae	rial photo	os, previous inspection	s), if available:	
Remarks: Very shallow (<10") root zone for Atl	antic white	cedar	s. Wet	land hydr	ology present based o	n a high water table, s	aturation, and water-stained leaves.



Sampling Point: WL-E-WET

	<u>Absolute</u> <u>% Cover</u>	Dominant Species	Indicator Status	Dominance Test W	orksheet:	:		
Tree Stratum (Plot size: 30 Ft)				Number of Domina			e	(^)
Chamaecyparis thyoides	80	Y	OBL	That Are OBL, FAC	CW, or FA	C:	6	(A)
Acer rubrum	10	N	FAC	Total Number of Do	minant			
	90	=Total Cover		Species Across all S			6	(B)
<u>Shrub Stratum</u> (Plot size: <u>30 Ft</u>) Clethra alnifolia	20	Y	FACW	Percent of Dominan That Are OBL, FAC		:	100.0%	(A/E
Vaccinium corymbosum	20	Y	FACW	Prevalence Index W	Vorkshee	t:		-
Viburnum dentatum	10	Y	FAC	Total % Cover o	of:	Multi	iply by:	
	50	=Total Cover		OBL species	80	x 1 =	80	
Herb Stratum (Plot size: 6 Ft)				FACW species	80	x 2 =	160	
Osmundastrum cinnamomeum	40	Y	FACW		40	x 3 =	120	
-	40	=Total Cover		FAC species	0	x 4 =	0	
Vine Stratum (Plot size: 20 Et)				FACU species	0	x 4 -	0	
(Plot size: <u>30 Ft</u>) Toxicodendron radicans	20	Y	FAC	UPL species				
	20	=Total Cover		Column Totals:	200	(A)	360	(B)
				Prevalence In	dex = B/A	=	1.80	
				Hydrophytic Vegeta	tion Indic	ators:		
				1 - Rapid Test f			aetation	
				X 2 - Dominance	, ,	,	gennen	
				X 3 - Prevalence I)		
				Problematic Hyd	drophytic \	/egetati	ion (Exp	olain)
				Indicators of hydric soi be present, unless dis				
				Definitions of Vegeta	ation Stra	ta:		
				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 plan approximately 20 ft (6 than 3 in. (7.6 cm) DB	m) or mo			
				Shrub – Woody plants approximately 3 to 20				
				Herb – All herbaceous herbaceous vines, reg plants, except woody 3 ft (1 m) in height.	gardless of	f size. Ir	ncludes \	wood
				Woody vine – All woo	dy vines, r	egardle	ess of he	ight.
	et)			Hydrophytic Vegetation Presen	nt? 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.



Project/Site: Orsted	City/County: Oc	cean County Sampling Date: 8/10/2020
Applicant/Owner: Ocean Wind - Forked River, LL	0	State: NJ Sampling Point: WL-F-UP
Investigators: Zak Lehmann J	aclyn Chapman Se	ection, Township, Range S T Lacey R
Landform (hillslope, terrace, etc.): Level	Local Relief (cond	cave, convex, none): None Slope(%) 0
Subregion (LRRor MLRA): LRR T	Lat: 39.811434 Lo	ng: -74.209815 Datum: WGS 1984
Soil Map Unit Name: Lakehurst sand, 0 to 5 perce	ent slopes	NWI Classification: Not mapped
Are climatic / hydrologic conditions on the site typical	for this time of year? Yes X N	No (If No, explain in Remarks)
Are Vegetation, Soil, Hydrology,	significantly disturbed? Are	e "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, Hydrology,	naturally problematic? (It	f needed, explain any answers in Remarks.)
plicant/Owner: Ocean Wind - Forked River, LLC restigators: Zak Lehmann Jaclyn Chapman ndform (hillslope, terrace, etc.): Level bregion (LRRor MLRA): LRR T Lake hurst sand, 0 to 5 percent slopes a climatic / hydrologic conditions on the site typical for this time of year? Yes X a Vegetation , Soil , Hydrology , naturally problematic? UMMARY OF FINDINGS - Attach a site map showing sampling por tydrophytic Vegetation Present? Yes Yes No tydric Soil Present? Yes Yes No X within a Wetland? marks: rea does contain hydrophytic vegetation; however, this area is not a wetland based on DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is required; check all that apply)		locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X N	⁰ Is the Sampled Area	
	• X within a Wetland?	Yes No X
Wetland Hydrology Present? YesN	o <u>X</u>	
Remarks:		- Charles and a sector of baseline to me
Area does contain hydrophytic vegetation; nowever,	this area is not a wetland based on lack	of hydric solls and wetland hydrology
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; chec	k 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 U)	Drainage Patterns (B10)

 Algal Mater Value (PL) 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) 	agery (B7)		Hyd Oxio	n Deposits (B15) (LRR U) Irogen Sulfide Odor (C1) dized Rhizospheres along Living Roots (C sence of Reduced Iron (C4) sent Iron Reduction in Tilled Soils (C6) n Muck Surface (C7) er (Explain in Remarks)	 Moss Trim Lines (B16) Dry-Season Water Table (C2) 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)
Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (stream g	Yes Yes Yes auge, monitorin	No No	X X X al photos	Depth (inches): Depth (inches): Depth (inches): s, previous inspections), if available:	Wetland Hydrology Present? Yes No_X
Remarks: No wetland hydrology present					



Sampling Point: WL-F-UP

	<u>Absolute</u> % Cover	Dominant Species	Indicator Status	Dominance Test Workshee	t:		
Tree Stratum (Plot size: 30 Ft)	<u>,,,,,,,,</u>	<u></u>	<u></u>	Number of Dominant Specie		0	
Pinus rigida	80	Y	FACU	That Are OBL, FACW, or FA	NC:	2	(
	80	=Total Cover		Total Number of Dominant			
Shrub Stratum (Plot size: 30 Ft)				Species Across all Strata:		3	(E
Myrica pensylvanica	40	Y	FAC	Percent of Dominant Species		66.7%	(A
Pinus rigida	5	Ν	FACU	That Are OBL, FACW, or FA	C:		- (
	45	=Total Cover		Prevalence Index Workshe	et:		
Herb Stratum (Plot size: <u>6 Ft</u>)				Total % Cover of:		oly by:	
Panicum dichotomiflorum	100	Y	FACW	OBL species 0	x 1 =	0	
	100	=Total Cover		FACW species 100	x 2 =	200	
<u>/ine Stratum</u>				FAC species 40	x 3 =	120	
				FACU species 85	x 4 =	340	
				UPL species 0	x 5 =	0	
				Column Totals: 225	(A)	660	
				Prevalence Index = B/A	<i>l</i> =	2.93	
				Hydrophytic Vegetation Indi	cators:		
				1 - Rapid Test for Hydror	ohytic Ve	getation	
				X 2 - Dominance Test > 50	%		
				X 3 - Prevalence Index ≤ 3	0		
				Problematic Hydrophytic	-		
				Indicators of hydric soil and wetla be present, unless disturbed or p			
				Definitions of Vegetation Str	ata:		
				Tree – Woody plants, excludin approximately 20 ft (6 m) or mo (7.6 cm) or larger in diameter a	ore in heig	ght and	3 i DB
				Sapling – Woody plants, exclu approximately 20 ft (6 m) or mo than 3 in. (7.6 cm) DBH.			
				Shrub – Woody plants, excludi approximately 3 to 20 ft (1 to 6	ng woody m) in hei	v vines, ght.	
				Herb – All herbaceous (non-wo herbaceous vines, regardless o plants, except woody vines, les 3 ft (1 m) in height.	of size. In	cludes \	wo
				Woody vine – All woody vines,	regardles	ss of he	igł
				Hydrophytic Vegetation Present? _{Ye}	s X	No	

Hydrophytic vegetation presented based on dominance test and prevalence index

Profile Desc	ription: (Des		e depth ne	eded to documen			confirm	the absence of Indicators.)	
Depth		Matrix	<u> </u>			-eatures		— <u> </u>	— .
(inches)		(moist)	%	Color (moist)	%	Type ¹		Texture	Remarks
0 to 4	10YR	3/1	50	10YR7/2	50	C	M	SAND	
4 to 20	10YR	6/6	100					SAND	
¹ Type: C=Co	ncentration, [D=Depletion	, RM=Red	uced Martix, CS=Co	overed or	Coated S	Sand Gra	ains. ² Location: PL=Pore Lining,	M=Matrix.
Stratified L Grganic B 5 cm Muck Muck Pres 1 cm Muck	A1) bedon (A2)	(LRR P, T, U) R U) T)		Polyvalue Below 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	e (S9) (LR heral (F1) (atrix (F2) =3) here (F6) hrface (F7) hs (F8) J)	(LRR O)	Τ, U)	Indicators for Problematic Hyd 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outside M Piedmont Floodplain Soils (F19) Anomalous Bright Loamy Soils (I (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (TF1: Other (Explain in Remarks)	ILRA 150A,B) (LRR P, S, T) F20) 2) (LRR T, U)
Thick Dark Coast Prai Sandy Mu Sandy Gle Sandy Rec Stripped M	k Surface (A12) irie Redox (A16 cky Mineral (S1 eyed Matrix (S4) dox (S5)) (MLRA 150 <i>A</i>) (LRR O, S) P, S, T, U)		Depleted Ochric (Iron-Manganese N Umbric Surface (F Delta Ochric (F17 Reduced Vertic (F Piedmont Floodpl Anomalous Bright	Masses (F 513) (LRR) (MLRA 1 518) (MLR ain Soils (12) (LRR C P, T, U) 51) A 150A, 15 F19) (MLR.	0B) A 149A)	³ Indicators of hydrophytic vege hydrology must be present, unless disturbed or problemat 0A, 153C, 153D)	
Type: Depth (inc								Hydric Soil Present? Ye	s No X
Remarks: No hydric soil	indicators prese	ent							

Project/Site: Orsted	City/County:	Ocean County	Sampling Date: 5/7/2020
Applicant/Owner: Ocean Wind - Forked River Pro	perty	State: NJ	Sampling Point: WL-F-WET
nvestigators: Stephen Seymour J	aclyn Chapman	Section, Township, Ran	ge S T Lacey R
andform (hillslope, terrace, etc.): Hillslope	Local Relief	(concave, 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% slope	3	NWI Classi	fication: Not mapped
Are climatic / hydrologic conditions on the site typical	for this time of year? Yes X	No (If No, e	explain in Remarks)
re Vegetation, Soil, Hydrology,	significantly disturbed?	Are "Normal Circumstan	ces" present? Yes X No
re Vegetation, Soil, Hydrology,	naturally problematic?	(If needed, explain any	answers in Remarks)
SUMMARY OF FINDINGS - Attach a site	man chowing campling p		,
Hydric Soil Present? Yes X N Wetland Hydrology Present? Yes X N Remarks: Narrow reed grass-dominated wetland. Source is a compared wetland. Source is a compared wetland.	0	Yes	X No
IYDROLOGY			
Wetland Hydrology Indicators:			/ Indicators (minimum of two required)
Primary Indicators (minimum of one is required; chec Surface Water (A1) High Water Table (A2)	k all that apply)		ice Soil Cracks (B6) sely Vegetated Concave Surface (B8)

 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) 	agery (B7)		Ox Ox Pre Re Th	drogen Sulfide Odor (C1) idized Rhizospheres along Livi esence of Reduced Iron (C4) cent Iron Reduction in Tilled So in Muck Surface (C7) her (Explain in Remarks)		 Moss Trim Lines (B16) Dry-Season Water Table (C2) 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)
Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (stream ga	Yes Yes Yes	No No	X X X ial photo	Depth (inches): Depth (inches): Depth (inches): s, previous inspections), if ava	ilable:	Wetland Hydrology Present? Yes <u>X</u> No
Remarks: Adjacent uplands are early success water-stained leaves.	ional red ceda	r and pitch	pines ~{	5-15' tall. Saturation at approxir	mately 15 inche	s below the ground surface. Wetland hydrology present based on



Sampling Point: WL-F-WET

	<u>Absolute</u> <u>% Cover</u>	Dominant Species	Indicator Status	Dominance Test Worksheet:		
Tree Stratum				Number of Dominant Species That Are OBL, FACW, or FAC	. 2	(A)
Shrub Stratum (Plot size: 30 Ft)					•	_ ` '
Juniperus virginiana	20	Y	FACU	Total Number of Dominant Species Across all Strata:	4	(P)
Pinus resinosa	20	Y	FACU		4	(B)
Herb Stratum (Plot size: 6 Ft)	40	=Total Cover		Percent of Dominant Species That Are OBL, FACW, or FAC:	50.0%	(A/E
Herb Stratum (Plot size: <u>6 Ft</u>) Panicum dichotomiflorum	60	Y	FACW	Prevalence Index Worksheet:		
Phragmites australis		- <u> </u>	FACW	Total % Cover of:	Multiply by:	
5	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	
					(A) 340	(B)
				Prevalence Index = B/A=	2.62	
				Hydrophytic Vegetation Indica	ators:	
				1 - Rapid Test for Hydrophy	ytic Vegetation	
				2 - Dominance Test > 50%		
				X 3 - Prevalence Index \leq 3.0		
				Problematic Hydrophytic V	egetation (Exp	plain)
				Indicators of hydric soil and wetland be present, unless disturbed or prol		
				Definitions of Vegetation Strata	a:	
				Tree – Woody plants, excluding v approximately 20 ft (6 m) or more (7.6 cm) or larger in diameter at b	e in height and	3 in. DBH)
				Sapling – Woody plants, excludir approximately 20 ft (6 m) or more than 3 in. (7.6 cm) DBH.		
				Shrub – Woody plants, excluding approximately 3 to 20 ft (1 to 6 m		
				Herb – All herbaceous (non-wood herbaceous vines, regardless of plants, except woody vines, less 3 ft (1 m) in height.	size. Includes v	wood
				Woody vine – All woody vines, re	egardless of he	ight.
				Hydrophytic Vegetation Present? Yes	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.

	ription: (Des		e depth n	eeded to documen			confirm	the absence of Indicators.)	
Depth (inches)	Color	Matrix (moist)	%	Color (moist)	Redox %	Features Type ¹	Loc 2	Texture	Remarks
0 to 4	10YR	4/1				Турс		FINE SANDY LOAM	
4 to 11	10YR	5/2	<u>100</u> 70	10YR 5/6	30	С	M	FINE SANDY LOAM	
11 to 20	10YR	3/2	100	1011(0/0				FINE SANDY LOAM	
				duced Martix, CS=C	overed o	r Coated S	Band Gra	ains. ² Location: PL=Pore Linin	g, M=Matrix.
5 cm Muck Muck Prese 1 cm Muck Depleted B Thick Dark Coast Prain Sandy Muc Sandy Gley Sandy Red Stripped M	1) edon (A2) c (A3) Sulfide (A4) ayers (A5) odies (A6) (LRF y Mineral (A7) (ence (A8) (LRF (A9) (LRR P, 7) below Dark Surf Surface (A12) rie Redox (A16) sky Mineral (S1) yed Matrix (S4) lox (S5)	(LRR P, T, U) R U) F) iace (A11)) (MLRA 150A) (LRR O, S)		 Polyvalue Below 7 Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Matrix (f Redox Dark Surface Depleted Dark Surface Redox Depressio Marl (F10) (LRR II Depleted Ochric (f Iron-Manganese I Umbric Surface (f Delta Ochric (F17 Reduced Vertic (f Piedmont Floodpi Anomalous Brigh 	e (S9) (LR neral (F1) atrix (F2) F3) ace (F6) urface (F7) ns (F8) U) (F11) (MLR F13) (LRR 7) (MLRA F18) (MLR Iain Soils ((LRR O) (LRR O) (12) (LRR C) (12) (LRR C (12) (LRR C) (15) (15) (15) (15) (15) (15) (15) (15	, P, T) 0B) A 149A)	Indicators for Problematic H 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outside Piedmont Floodplain Soils (F ² 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	e MLRA 150A,B) 19) (LRR P, S, T) Is (F20) "F12) (LRR T, U) egetation and wetland
Type: Depth (inch Remarks:			· 	ted Matrix (F3) indicato	r			Hydric Soil Present?	Yes X No

Project/Site: Orsted	City/County:	Ocean County Sampling Date: 8/11/2020
Applicant/Owner: Ocean Wind - Forked River, LL	_C	State: NJ Sampling Point: WL-G1-UP
Investigators: Zak Lehmann	Jaclyn Chapman	Section, Township, Range S T Lacey R
Landform (hillslope, terrace, etc.): None	Local Relief (c	concave, convex, none): None Slope(%) 0
Subregion (LRRor MLRA): LRR T	Lat: 39.811379	Long: -74.212809 Datum: WGS 1984
Soil Map Unit Name: Lakehurst Sand, 0-5% slop	es	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, 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	e map showing sampling poi	nt locations, transects, important features, etc.
Watland Lludralagy (Dresent?)	No Is the Sampled Area within a Wetland?	Yes No X
	e index alone; however, area is not a v	wetland based on lack of hydric soils and wetland hydrology
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; che	ck all that apply)	Surface Soil Cracks (B6)
Surface Water (A1)	Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Saturation (A3)	Marl Deposits (B15) (LRR U)	Drainage Patterns (B10) Moss Trim Lines (B16)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Ro	Crayfish Burrows (C8)
Drift Deposits (B3)	Presence of Reduced Iron (C4)	Caturation Visible on Asriel Imag (CO)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C	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 No X
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aeri	al photos, previous inspections), if available	
Remarks:		
No wetland hydrology present		



VE

			Absolute % Cover	<u>Dominant</u> Species	Indicator Status	Dominance Test Wor	rksheet:			
Tree Stratum	(Diot circy 20 Ft	1	70 COver	opecies	SIGIUS	Number of Dominant	Species			
Juniperus virgini	(Plot size: <u>30 Ft</u>)	20	Y	FACU	That Are OBL, FACW	, or FAC):	1	_ (
Prunus serotina			5	- <u> </u>	FACU	Total Number of Domi	nant			
			25	=Total Cover		Species Across all Str	ata:		4	(1
Shrub Stratum	(Plot size: 30 Ft	1				Percent of Dominant S	Snecies			-
Rubus idaeus)	20	Y	FACU	That Are OBL, FACW,			25.0%	(/
			20	=Total Cover		Prevalence Index Wo	orksheet	:		
lerb Stratum	(Plot size: 6 Ft)				Total % Cover of:			ply by:	
Panicum dichoto)	80	Y	FACW	OBL species	0	x 1 =	0	
Eupatorium perf			10	N	FACW	FACW species	100	x 2 =	200	
Phragmites aust			10	N	FACW		0	x 3 =	0	
			100	=Total Cover		FAC species	45	x 4 =	180	
ine Stratum						FACU species	45 0	x 4 – x 5 =	0	
						UPL species				
						Column Totals:	145	(A)	380	
						Prevalence Inde	x = B/A=	-	2.62	
						Hydrophytic Vegetatio	on Indica	ators:		
						1 - Rapid Test for	Hydroph	ytic Ve	getation	
						2 - Dominance Te	st > 50%)		
						X 3 - Prevalence Ind	lex ≤ 3.0			
						Problematic Hydro			on (Evi	วไร
								U		<i>,</i> 1d
						Indicators of hydric soil a be present, unless distur				
						Definitions of Vegetati	on Strat	a:		
						Tree – Woody plants, ex	kcluding	woody	vines,	
						approximately 20 ft (6 m (7.6 cm) or larger in diar	i) or more	e in heig	ght and	
						Sapling – Woody plants approximately 20 ft (6 m than 3 in. (7.6 cm) DBH) or more			
						Shrub – Woody plants, o approximately 3 to 20 ft				
						Herb – All herbaceous (herbaceous vines, regar plants, except woody vir 3 ft (1 m) in height.	rdless of	size. In	cludes v	NO
						Woody vine – All woody	vines, re	egardles	ss of hei	igł
						Hydrophytic Vegetation Present?				



Profile Desci	ription: (Des		depth ne	eded to documen			confirm	the absence of Indicators.)	
Depth	(inches) Color (moist)		<u> </u>			Features			_
(inches)		(moist)	%	Color (moist)	%	Type ¹	Loc 2	Texture	Remarks
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	C	Μ	SAND	
¹ Type: C=Cor	ncentration, D	=Depletion,	RM=Redu	uced Martix, CS=Co	overed o	or Coated S	Sand Gra	ains. ² Location: PL=Pore Li	ning, M=Matrix.
Stratified L Grganic Bc 5 cm Muck Muck Pres 1 cm Muck Depleted E Thick Dark Coast Prai Sandy Muc	1) edon (A2) c (A3) Sulfide (A4)	(LRR P, T, U) R U) T) ace (A11)) (MLRA 150A) (LRR O, S))	 Polyvalue Below S Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Matrix (f Redox Dark Surface Depleted Matrix (f Redox Depression Marl (F10) (LRR I Depleted Ochric (Iron-Manganese N Umbric Surface (f Delta Ochric (F17 	e (S9) (LF neral (F1) atrix (F2) F3) ace (F6) urface (F7 ns (F8) J) F11) (MLI Masses (F F13) (LRF	RR S, T, U) (LRR O)) RA 151) €12) (LRR C & P, T, U)		Indicators for Problemati	side MLRA 150A,B) (F19) (LRR P, S, T) Soils (F20) e (TF12) (LRR T, U) s) ic vegetation and wetland sent,
Sandy Gle				Reduced Vertic (F17			0B)		
Stripped M	atrix (S6)			Piedmont Floodpl					
Dark Surfa	ce (S7) (LRR P	, S, T, U)		Anomalous Bright			-	9A, 153C, 153D)	
Type: Depth (incl	tive Layer (i	fobserve	d):					Hydric Soil Present?	Yes <u>No X</u>
Remarks: No hydric soil i	indicators prese	ent							

Project/Site:	Orsted			City/Co	unty:	Ocean	County		Samp	ling Date:	5/7/2020	
Applicant/Owner:	Ocean Wind - Fo	rked River	Property				State:	NJ	Samp	ling Point:	WL-G-W	ET
Investigators:	Stephen Seymour		Jaclyn Cha	pman		Section	n, Townsl	nip, Rang	ge S	T Lac	ey R	
Landform (hillslop	pe, terrace, etc.):	None			Local Relie	ef (concave	, convex,	none):	None		Slope(%) 0
Subregion (LRRc	or MLRA): LRR T		Lat: 39.8	311349		Long:	-74.213	354		Datum	n: WGS 198	4
Soil Map Unit Na	me: Lakehurst sar	d 0-5% slo	pes				NW	I Classif	ication:	Not mapp	ed	
Are climatic / hyd	Irologic conditions on t	ne site typi	cal for this tim	e of year?	Yes	X No		(If No, e	xplain in	Remarks)		
Are Vegetation	, Soil, Hy	drology	, significan	tly disturbe	d?	Are "No	ormal Circ	umstanc	es" pres	ent? Yes	s X	No
Are Vegetation	, Soil, Hy	drology	, naturally	problematic	?	(If nee	eded, exp	lain any	answers	in Remark	s.)	
Hydrophytic Ve Hydric Soil Pres Wetland Hydrol Remarks:	sent?	Yes X Yes X Yes X	No No No	ls the withir	Sampled A	rea ?		Yes	X	No		·
HYDROLOGY										rs (minimu		and an all

wetland Hydrology Indicato	rs:						Secondary indicators (minimum or two required)		
Primary Indicators (minimum	of one is	requir	ed; ch	eck all t	hat apply)		Surface Soil Cracks (B6)		
Surface Water (A1) ✓ High Water Table (A2) ✓ Saturation (A3) ✓ Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)				Ma Ma Hy Ox Ox Pr	uatic Fauna (B13) arl Deposits (B15) (LRF drogen Sulfide Odor (C idized Rhizospheres al esence of Reduced Iror ecent Iron Reduction in	c1) ong Living Roots (C3) n (C4)	 Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imag.(C9) 		
Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Im ✓ Water-Stained Leaves (B9)	agery (B7)				iin Muck Surface (C7) her (Explain in Remark	s)	Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Sphagnum moss (D8) (LRR T,U)		
Field Observations:									
Surface Water Present?	Yes		No	Х	Depth (inches):				
Water Table Present?	Yes	Χ	No		Depth (inches):	3			
Saturation Present?	Yes	Χ	No		Depth (inches):	To surface	Wetland Hydrology Present? Yes X No		
(includes capillary fringe)									
Describe Recorded Data (stream ga	iuge, moni	toring	well, ae	rial photo	os, previous inspections	s), it available:			
Remarks: Extensive areas with shallow (1-4" i red cedar and pitch pine.	nundation)	in the	three p	olygons t	hat comprise Wetland	G. Block 1001, Lot 4.0	06 is level. Surrounding uplands in early successional stage ~6-12 ft		



Sampling Point: WL-G-WET

Trac Stratum	<u>Absolute</u> <u>% Cover</u>	<u>Dominant</u> Species	Indicator Status	Dominance Test Work Number of Dominant S				
Tree Stratum				That Are OBL, FACW,			2	(/
<u>Shrub Stratum</u> (Plot size: <u>30 Ft</u>) Juniperus virginiana	10	Y	FACU	Total Number of Domin	ant			
	10			Species Across all Stra	ita:		3	(E
Herb Stratum (Plot size: 6 Ft)		=Total Cover		Percent of Dominant Sp That Are OBL, FACW,			66.7%	(A
Panicum dichotomiflorum	40	Y	FACW	Prevalence Index Wo	rkshoot:			
Phragmites australis	30	Y	FACW	Total % Cover of:	Köneet.	Multip	ly by:	
line Otreture	70	=Total Cover		OBL species	0	x 1 =	0	
/ine Stratum				FACW species	70	x 2 =	140	
				FAC species	0	x 3 =	0	
				FACU species	10	x 4 =	40	
				UPL species	0	x 5 =	0	
				Column Totals:		A)	180	(
				Prevalence Index	c = B/A=		2.25	
				Hydrophytic Vegetatio	n Indicat	tors:		
				1 - Rapid Test for H			etation	
				X 2 - Dominance Tes			,	
				X 3 - Prevalence Inde	$x \ge 3.0$			
				Problematic Hydro	phytic Ve	egetatio	on (Exp	ola
				Indicators of hydric soil an be present, unless disturb				
				Definitions of Vegetation	on Strata	:		
				Tree – Woody plants, ex approximately 20 ft (6 m) (7.6 cm) or larger in diam	or more	in heig	ght and	
				Sapling – Woody plants, approximately 20 ft (6 m) than 3 in. (7.6 cm) DBH.				
				Shrub – Woody plants, e approximately 3 to 20 ft (
				Herb – All herbaceous (n herbaceous vines, regard plants, except woody vine 3 ft (1 m) in height.	dless of s	size. In	cludes v	vov
				Woody vine – All woody	vines, reg	gardles	s of he	gh
				Hydrophytic Vegetation Present?	Yes	x	No	
narks: (Include photo numbers here or on a separate shee drophytic vegetation present based on dominance of spec		L, FACW. or F	-AC greater	Vegetation Present?				ua



Depth (inches) Matrix Redox Features 0 to 4 10YR 6 / 6 100 70 Type 1 Loc 2 Texture Remarks 0 to 4 10YR 6 / 6 100 FINE SAND Wet fine sand 4 to 10YR 4 / 1 70 10YR 5/4 30 C M FINE SAND Wet silty sand	Profile Desci	ription: (Des		depth n	eeded to documen			confirm	the absence of Indicators.)	
0 to 4 10YR 6 / 6 100 FINE SAND Wet fine sand		Color		0/	Color (moist)			1 00 2	Touturo	Domorko
					Color (moist)	%	Туре	LOC 2		
4 10 20 10TR 47 1 10 10TR 5/4 30 C WI TINE SAND Wet shity said						20		N.4		
	4 10 20		4/1	70	101R 5/4		<u> </u>			
¹ Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.	¹ Type: C=Cor	ncentration, [D=Depletion,	RM=Red	duced Martix, CS=C	overed o	r Coated S	Sand Gra	ains. ² Location: PL=Pore L	ining, M=Matrix.
type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. 2 Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: Polyvalue Below Surface (S8) (LRR S, T, U) Indicators for Problematic Hydric Soils: ³ Histic Epideon (A2) Loamy Macky Mineral (F1) (LRR Q) 2 cm Mack (A9) (LRR O) Black Histic (A3) Loamy Gleyed Matrix (F2) Reduced Veric (F18) (ULRR P, S, T) Graine Bodies (A6) (LRR P, T, U) Redox Dark Surface (F6) Mark (A9) (LRR P, T, U) Graine Bodies (A6) (LRR P, T, U) Redox Dark Surface (F7) Mack (A9) (LRR P, T, U) Muck (A90, CLR P, T, U) Redox Dark Surface (F7) Red Parent Material (TF2) Muck (A90, CLR P, T, U) Redox Dark Surface (F7) Red Parent Material (TF2) Muck (A9) (LRR P, T) Mark (F10) (LRR U) Redox Dark Surface (F12) In m.Ka CAR Surface (A11) Depleted Dark Surface (F12) Red Parent Material (TF2) Sandy Mucky Mineral (S1) (LRR P, S, S1) Demin-Manganese Masses (F2) (LRR O, P, T) 3 Indicators of hydrophytic vegetation and wetland hydrology must be present; Sandy Mucky Mineral (S1) (LRR O, S) Dimbric Surface (F13) (LRR A, F1, U) 3 Indicators of hydrophytic vegetation and wetland hydrology must be present; Sandy Mucky Mineral (S1) (LRR O, S) Defleted Ontric (F17) (MLR A 150A, 150B)	4 to 20 1Type: C=Cor Hydric Soil I Histosol (A Histic Epip Black Histic Hydrogen S Stratified L Organic Bo 5 cm Muck Muck Press 1 cm Muck Depleted B Thick Dark Coast Prain Sandy Muc Sandy Red Stripped M Dark Surfa Restrict Type: Depth (inch Remarks: Depth (inch	10YR ncentration, E (ndicators: 1) edon (A2) c (A3) Sulfide (A4) ayers (A5) odies (A6) (LRF y Mineral (A7) ence (A8) (LRF P, ⁻) below Dark Sur - Surface (A12) rie Redox (A16 cky Mineral (S1) yed Matrix (S4) lox (S5) atrix (S6) ce (S7) (LRR F 	4 / 1 D=Depletion, (LRR P, T, U) (LRR P, T, U) (ILRR P, T, U) (ILRR 0, T) (MLRA 150A) (LRR 0, S) (LRR 0, S) (ILRR 0, S) (ILRR 0, S)	70 RM=Rec	duced Martix, CS=C Polyvalue Below Thin Dark Surfac Loamy Mucky Mii Loamy Gleyed Ma ✓ Depleted Matrix (Redox Dark Surfac Depleted Dark Su Redox Depressio Marl (F10) (LRR I Depleted Ochric (Iron-Manganese I Umbric Surface () Delta Ochric (F17 Reduced Vertic () Piedmont Floodp Anomalous Brigh	overed o Surface (S e (S9) (LR neral (F1) atrix (F2) F3) ace (F6) urface (F7) ons (F8) U) (F11) (MLF Masses (F F13) (LRR 7) (MLRA 7 F18) (MLR Iain Soils (Lian Soils (r Coated S (LRR S, (IR S, T, U) (LRR O) (LRR O) (12) (LRR O (2) (LRR O (2) (LRR O (2) (LRR O (2) (LRR O (2) (12) (LRR O (5) (12) (12) (5) (12) (12) (12) (12) (5) (12) (12) (12) (12) (12) (5) (12) (12) (12) (12) (12) (12) (12) (12	Sand Gra T, U) , P, T) 0B) A 149A) MLRA 149	ains. ² Location: PL=Pore L Indicators for Problemati 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (ou Piedmont Floodplain Soils Anomalous Bright Loamy (MLRA 153B) Red Parent Material (TF2 Very Shallow Dark Surface Other (Explain in Remark ³ Indicators of hydrophyd hydrology must be pre- unless disturbed or pro- 9A, 153C, 153D) Hydric Soil Present?	ining, M=Matrix. ic Hydric Soils: ³) tside MLRA 150A,B) s (F19) (LRR P, S, T) Soils (F20)) xe (TF12) (LRR T, U) s) tic vegetation and wetland sent, bblematic.

Project/Site: Orsted	City/County: Oce	ean County Sampling Date: 8/10/2020
Applicant/Owner: Ocean Wind - JCP&L Property		State: NJ Sampling Point: WL-H-UP
	n Chapman Sec	ction, Township, Range S T Lacey R
Landform (hillslope, terrace, etc.): Level		ave, convex, none): None Slope(%) 0
Subregion (LRRor MLRA): LRR T Lat	: 39.810120 Lon	ng: -74.204154 Datum: WGS 1984
Soil Map Unit Name: Psamments, 0 - 2% slopes		NWI Classification: Not mapped
Are climatic / hydrologic conditions on the site typical for t	his time of year? Yes <u>X</u> N	lo (If No, explain in Remarks)
Are Vegetation, Soil, Hydrology, sig	nificantly disturbed? Are	"Normal Circumstances" present? Yes X No
Are Vegetation, Soil, Hydrology, nat	turally problematic? (If	needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach a site ma	ap showing sampling point l	ocations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X No		
	Is the Sampled Area	
Wetland Lludrology Dresent?	X within a Wetland?	Yes No X
Wetland Hydrology Present? YesNo		
hydrology HYDROLOGY		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check al	I that apply)	
		Surface Soil Cracks (B6)
	Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10)
	Marl Deposits (B15) (LRR U)	Moss Trim Lines (B16)
	Hydrogen Sulfide Odor (C1)	
	Oxidized Rhizospheres along Living Roots (Crayfish Burrows (C8)
	Presence of Reduced Iron (C4)	Saturation Visible on Aerial Imag.(C9)
	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)
	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	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 <u>No X</u>
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial pho	otos, previous inspections), if available:	
Remarks:		
No wetland hydrology present		



Sampling Point: WL-H-UP

	<u>Absolute</u> <u>% Cover</u>	Dominant Species	Indicator Status	Dominance Test Workshe			
ree Stratum (Plot size: <u>30 Ft</u>) Juniperus virginiana	20	Y	FACU	Number of Dominant Spec That Are OBL, FACW, or F		3	
Pinus rigida	20	- <u> </u>	FACU	Total Number of Dominant			
Acer rubrum		- <u> </u>	FAC	Species Across all Strata:		6	(
	50	=Total Cover		Percent of Dominant Specie		50.0%	- (1
hrub Stratum (Plot size: <u>30 Ft</u>)				That Are OBL, FACW, or F	AC:		-`
Viburnum dentatum	1	Y	FAC	Prevalence Index Worksh	eet:		
	1	=Total Cover		Total % Cover of:	Multi	ply by:	
erb Stratum (Plot size: 6 Ft)				OBL species 0	x 1 =	0	
Phragmites australis	60	Y	FACW	FACW species 60	x 2 =	120	
Rubus idaeus	20	Y	FACU	FAC species 16	x 3 =	48	
Polygonum achoreum	5	Ν	FAC	FACU species 60	x 4 =	240	
	85	=Total Cover		UPL species 0	x 5 =	0	
ne Stratum				Column Totals: 136	(A)	408	
				Prevalence Index = B	/A=	3.00	
				Hydrophytic Vegetation Inc		0.00	
				1 - Rapid Test for Hydro		netation	ı
				2 - Dominance Test > 5		5	
				X 3 - Prevalence Index ≤	3.0		
				Problematic Hydrophyti	c Vegetati	on (Ex	pla
				Indicators of hydric soil and we be present, unless disturbed or			
				Definitions of Vegetation St			
				Tree – Woody plants, excludi approximately 20 ft (6 m) or n (7.6 cm) or larger in diameter	nore in hei	ght and	
				Sapling – Woody plants, excl approximately 20 ft (6 m) or n than 3 in. (7.6 cm) DBH.			
				Shrub – Woody plants, exclud approximately 3 to 20 ft (1 to			
				Herb – All herbaceous (non-w herbaceous vines, regardless plants, except woody vines, le 3 ft (1 m) in height.	of size. In	cludes	WO
				Woody vine – All woody vines	s, regardle	ss of he	igl
				Hydrophytic Vegetation Present? Y		No	



Profile Desc	ription: (Des	cribe to the	depth n	eeded to documen			confirm	the absence of Indicators.)				
Depth		Matrix				Features						
(inches)	Color	(moist)	%	Color (moist)	%	Type 1	Loc ²	Texture	Remarks			
0 to 4	10YR	2/1	60	10YR6/2	40	С	Μ	SAND				
4 to 12	10YR	6/2	60	10YR2/1	40	С	М	SAND				
12 to 20	10YR	5/6	100					SAND				
¹ Type: C=Cor	ncentration, D	=Depletion,	RM=Rec	luced Martix, CS=Co	overed o	r Coated \$	Sand Gra	ains. ² Location: PL=Pore Lin	ing, 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)			X	 Polyvalue Below S Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Mati Depleted Matrix (I Redox Dark Surfa Depleted Dark Surfa Depleted Dark Surfa Marl (F10) (LRR U Depleted Ochric (Iron-Manganese Mation 	e (S9) (LR heral (F1) hatrix (F2) =3) hce (F6) hrface (F7) hrs (F8) J) F11) (MLF	R S, T, U) (LRR O) RA 151)		Indicators for Problematic Hydric Soils: ³ 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outside MLRA 150A,B) Piedmont Floodplain Soils (F19) (LRR P, S, T) Anomalous Bright Loamy Soils (F20) (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) (LRR T, U) Other (Explain in Remarks) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present,				
Sandy Muc Sandy Gle Sandy Rec Stripped M	cky Mineral (S1) yed Matrix (S4) dox (S5) latrix (S6) loce (S7) (LRR P	(LRR O, S)		Umbric Surface (F Delta Ochric (F17 Reduced Vertic (F Piedmont Floodpl Anomalous Bright	=13) (LRR) (MLRA 1 =18) (MLR ain Soils (P, T, U) 151) A 150A, 15 F19) (MLR.	0B) A 149A)	unless disturbed or probl 9A, 153C, 153D)	ematic.			
Restrict Type:	tive Layer (i	f observe	d):					Urdrie Seil Present?	Vac Na V			
Depth (incl	hes):							Hydric Soil Present?	Yes No X			
Remarks: No hydric soil	indicators prese	nt										

Project/Site: Orsted			City/Co	City/County: Ocea			cean County			Sampling Date: 8/10/2020			
Applicant/Owner:	Ocean Wind -	Holtec Prop	perty					State: N	IJ	Sampli	ng Point:	WL-H-V	VET
Investigators:	Zak Lehmann		Jac	lyn Chapman			Sectio	n, Township,	Range	e S	T Lac	ey R	
Landform (hillslop	pe, terrace, etc.):	Depr	ession		Local R	elief	(concave	e, convex, nor	ne): N	lone		Slope	e(%) 0
Subregion (LRR	or MLRA): LRR T		La	at: 39.810053			Long:	-74.204066			Datun	n: WGS 1	984
Soil Map Unit Na	me: Manahawk	in muck, 0-2	2 percen	t slopes, frequently	flooded			NWI CI	lassific	ation:	PEM1Fh		
Are climatic / hyc	Irologic conditions of	on the site ty	pical for	this time of year?	Yes	Х	No	(If N	No, exp	olain in F	Remarks)		
Are Vegetation	, Soil,	Hydrology	, si	gnificantly disturbe	d?		Are "No	ormal Circums	stance	s" prese	nt? Ye	s X	No
Are Vegetation	, Soil,	Hydrology	, na	aturally problematic	??		(If nee	eded, explain	i any ai	nswers i	n Remark	s.)	
SUMMARY	OF FINDINGS -	Attach a	site m	<u>ap showing sates and sate</u>	ampling	g po	int loc	ations, tra	ansec	cts, im	portant	featur	es, etc.
Hydrophytic Ve	getation Present?	Yes 2	X No										
Hydric Soil Pres	0	Yes 2		Is the	Sampleo		a						
Wetland Hydrol		Yes 2		withir	n a Wetla	nd?		Ye	s	XN	lo		
Remarks:													
	d based on domina	nce of hydro	ophytic v	egetation and pres	ence of h	ydric	soils an	d wetland hyd	drology	y			
								0			,	<i>с.</i>	·
v	logy Indicators: ors (minimum of one	e is required	; check a	all that apply)						e Soil Cra	-	m of two	required)
Surface Water	•			Aquatic Fauna (B13)							ted Concav	e Surface	(B8)

 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 Ima Water-Stained Leaves (B9) 	agery (B7)		Marl De Hydroge Oxidize Present Recent	Fauna (B13) eposits (B15) (LRR U) en Sulfide Odor (C1) d Rhizospheres along ce of Reduced Iron (C4 Iron Reduction in Tille uck Surface (C7) Explain in Remarks)	Living Roots (C3) 4)	 Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (C2) 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)
Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (stream ga	Yes Yes Yes	No No No g well, aer	X De X De	epth (inches): epth (inches): epth (inches): evious inspections), if	available:	Wetland Hydrology Present? Yes X No
Remarks: Wetland hydrology present.						



Sampling Point: WL-H-WET

		<u>Absolute</u> <u>% Cover</u>		Indicator Status	Dominance Test	Worksheet:			
ree Stratum	(Plot size: 30 Ft)			Number of Domin			2	(A)
Juniperus virginia		, 10	Y	FACU	That Are OBL, FA	CVV, OF FAC		-	_ (, (
Acer rubrum		5	Y	FAC	Total Number of D				
		15	=Total Cover		 Species Across all 	Strata:		3	(B)
<u>Shrub Stratum</u> Clethra alnifolia	(Plot size: 30 Ft) 50	Y	FACW	Percent of Domina That Are OBL, FA		:	66.7%	(A/E
		50			Prevalence Index	Worksheet	•		
Herb Stratum	(Diot cizo: 6 Et				Total % Cover			oly by:	
Carex stricta	(Plot size: 6 Ft) 20	Ν	OBL	OBL species	20	x 1 =	20	
Phragmites austr	alis		N	FACW	FACW species	55	x 2 =	110	
	<u> </u>	25				5	x 3 =	15	
Vine Stratum					FAC species	10	x 4 =	40	
<u>vino otratam</u>					FACU species				
					UPL species	0	x 5 =	0	
					Column Totals:	90	(A)	185	(B
					Prevalence I	Index = B/A=	=	2.06	
					Hydrophytic Vege	tation Indica	ators:		
					1 - Rapid Test	for Hydroph	ytic Veg	getation	
					X 2 - Dominance	e Test > 50%	, D	-	
					X 3 - Prevalence	e Index ≤ 3.0	I		
					Problematic H	ydrophytic V	/egetatio	on (Exp	olain
					Indicators of hydric s be present, unless d				
					Definitions of Vege				
					Tree – Woody plants approximately 20 ft ((7.6 cm) or larger in	(6 m) or mor	e in heig	ght and	
					Sapling – Woody pla approximately 20 ft (than 3 in. (7.6 cm) D	(6 m) or mor			
					approximately 20 ft	(6 m) or mor 0BH. nts, excluding	re in heig g woody	yht and vines,	
					approximately 20 ft (than 3 in. (7.6 cm) D Shrub – Woody plan	(6 m) or mor DBH. 20 ft (1 to 6 n us (non-woo egardless of	g woody n) in hei dy) plar size. In	y vines, ght and ght. nts, inclu cludes v	less Iding
					approximately 20 ft (than 3 in. (7.6 cm) E Shrub – Woody plar approximately 3 to 2 Herb – All herbaceo herbaceous vines, re plants, except wood	(6 m) or mor DBH. 20 ft (1 to 6 n us (non-woo egardless of y vines, less	e în heig g woody n) in hei dy) plar size. In than ap	y vines, ght. ats, inclu cludes v oproxima	Iess Iding wood ately
					approximately 20 ft (than 3 in. (7.6 cm) D Shrub – Woody plan approximately 3 to 2 Herb – All herbaceo herbaceous vines, re plants, except wood 3 ft (1 m) in height.	(6 m) or mor DBH. 10 ft (1 to 6 n us (non-woo egardless of y vines, less	e în heig g woody n) in hei dy) plar size. In than ap egardles	y vines, ght. ats, inclucing cludes to pproximations ass of he	Iess Iding wood ately
narks: (Include phot	to numbers here or on a se	parate sheet.)			approximately 20 ft (than 3 in. (7.6 cm) E Shrub – Woody plar approximately 3 to 2 Herb – All herbaceo herbaceous vines, rr plants, except wood 3 ft (1 m) in height. Woody vine – All wo Hydrophytic	(6 m) or mor DBH. nts, excluding 20 ft (1 to 6 n us (non-woo egardless of y vines, less body vines, re	e în heig g woody n) in hei dy) plar size. In than ap egardles	y vines, ght. ats, inclucing cludes to pproximations ass of he	less Iding wood ately



	ription: (Des		depth nee	eded to documen			confirm	the absence of Indicators.)	
Depth (inches)	Color	Matrix (moist)	%	Color (moist)	Redox %	Features Type ¹	1 00 2	Texture	Remarks
	10YR	2 / 1	100		/0	туре	LUC -	LOAMY SAND	Black organic
0 to 4 4 to 20	10YR	2/1	100		70	CS	М	LOAMY SAND	70% particles masked with organic
¹ Type: C=Cor	ncentration, [)=Depletion,	RM=Redu	iced Martix, CS=C	overed o	r Coated S	Sand Gra	ains. ² Location: PL=Pore Linir	ng, M=Matrix.
Stratified L Grganic Bo S cm Muck Muck Pres I cm Muck Depleted E Thick Dark Coast Prai Sandy Muc Sandy Gle Sandy Rec Stripped M	A1) pedon (A2) (c (A3) Sulfide (A4) ayers (A5) podies (A6) (LRF (A6) (LRF (A7) pence (A8) (LRF (A9) (LRR P, C49) (LR P,	(LRR P, T, U) R U) T) face (A11)) (MLRA 150A) (LRR O, S)	[[[Polyvalue Below Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Ma Depleted Matrix (Redox Dark Surface Depleted Dark Surface Redox Depressio Marl (F10) (LRR I) Depleted Ochric (Iron-Manganese I) Umbric Surface (I) Delta Ochric (F17) Reduced Vertic (I) Piedmont Floodpi 	e (S9) (LR neral (F1) atrix (F2) F3) ace (F6) urface (F7 ns (F8) U) (F11) (MLI Masses (F F13) (LRR ') (MLRA	(LRR O) (LRR O) (212) (LRR C (212) (LRR C (212) (LRR C (212) (LRR C (212) (123	o, P, T) 0B)	Indicators for Problematic I 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outsic Piedmont Floodplain Soils (F Anomalous Bright Loamy Soi (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	te MLRA 150A,B) 19) (LRR P, S, T) iils (F20) TF12) (LRR T, U) regetation and wetland t,
Туре:	tive Layer (if observe	d):	Anomalous Brigh				Hydric Soil Present?	Yes X No
Depth (incl	hes):								
Remarks: 0-4 inches con	isists of a black	organic sedir	nent. Hydric	soils present.					

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region NJOCEAn CO. sland Beach State Park city/county: Seuside Park, Project/Site: Sampling Date: Applicant/Owner: Sampling Point: State: -MOUR Deidia Valianh Section, Township, Range: eve S Investigator(s): Landform (hillslope, terrace, etc.): Eve Local relief (concave, convex, none): Slope (%): Lat: 39. 90441 Long 74, 081 66 Subregion (LRR or MLRA): Datum: Soil Map Unit Name: HOOUSAN Fine San ()-10% slope NWI classification: PSSL Are climatic / hydrologic conditions on the site typical for this time of year? Yes (If no, explain in Remarks.) No Are Vegetation _____, Soil _____, or Hydrology ___ _____ significantly disturbed? Are "Normal Circumstances" present? Yes 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? is the Sampled Area Yes ____ No ____ Hydric Soll Present? X No within a Wetland? Wetland Hydrology Present? No Remarks: wetland HYDROLOGY Wetland Hydrology Indicators: Secondary Indicators (minimum of two required) Primary Indicators (minimum of one is required; check all that apply) Surface Soil Cracks (B6) ____ Aquatic Fauna (B13) Surface Water (A1) Sparsely Vegetated Concave Surface (B8) High Water Table (A2) Marl Deposits (B15) (LRR U) Drainage Patterns (B10) 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) __ Drift Deposits (B3) Recent Iron Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (C9) ____ Thin Muck Surface (C7) _ Algal Mat or Crust (B4) 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: Yes _____ No X Depth (inches): _ Yes _____ No X Depth (inches): _ Surface Water Present? Water Table Present? _ Depth (inches): 101 Wetland Hydrology Present? Yes _____ No ___ Saturation Present? (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: crescent-shaped we Hand adjacent to west side of main wadway. There is a 3-5' high bern west of we Hand. No outlet-apparently isolated. Remarks:

se la c			Wetland A
VEGETATION (Four Strata) – Use scientific na	imes of plants.		Sampling Point: <u>UL-1</u>
Tree Stratum (Plot size: 30) 1. ACCE North North 2.	Absolute Domina <u>% Cover</u> <u>Specie</u>	<u>s?</u> <u>Status</u> FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: (A)
3 4 5 6			Total Number of Dominant Species Across All Strata:
7	= Total (Prevalence Index worksheet:
50% of total cover: <u>Sapling/Shrub Stratum</u> (Plot size: 15) 1. Viby(num dentatum 2. Valcaintum Corver hosum)	$\frac{20\% \text{ of total comparison}}{20} \qquad \qquad$	PAC FACW	FAC species 70 $x3 = 240$ FACU species $x4 = 2$ UPL species $x5 = 250$
3 4 5 6			Prevalence index = $B/A = 2,45$ Hydrophytic Vegetation indicators:
7	<u>45</u> = Total (1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.01 Problematic Hydrophytic Vegetation1 (Explain)
Herb Stratum (Plot size: 50% of total cover: 1	$\frac{20\% \text{ of total correction}}{10} \frac{1}{10}$	FACW	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata:
2. <u>OKOZYCC</u> <u>SCHSIMINS</u> 3 4 5			Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
G 7 8			Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tail. Herb – All herbaceous (non-woody) plants, regardless
9 10 11 12.			of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
12 50% of total cover:	60 = Total 0 20% of total co		
Woody Vine Stratum (Plot size: 30) 1. Smild totundifulice 2	<u>30 Y</u>	<u> </u>	
5 5	<u>30</u> = Total	Cover	Hydrophytic Vegetation Present? Yes X No
50% of total cover:		ver:	Present? Yes <u>No</u> No
Remarks: (If observed, list morphological adaptations be	σw).		

rofile Descr Depth			o the depti	n needed	to document		or or confirm i	he absen	ce of Indica	ators.)		
nches)	Color (m	Matrix Iolst)	%	Color (Redox Fea moist)9	Kures Kartype	Loc ²	Texture			Remarks	
<u>"- 6"</u>	211 1	LOYR	100					Pine			loam	\
"-20"	3/1 1	DYR	100					Phe	Pine	S	Ity sand	1
rdrlc Soll In _ Histosol (<i>,</i>	ndicators: (A1)	D=Depie (Applica	tion, RM=F	RRs, unl	Matrix, MS=Ma ess otherwise yvalue Below S	noted.) Surface (S8)	(LRR S, T, U)	Indicato	n: PL=Pore	lemat	g, M=Matrix. Ic Hydric Solis O)	ə.
Black His	pedon (A2) tic (A3) i Sulfide (A4	n.		Thi Loa	n Dark Surface amy Mucky Min	(S9) (LRR : eral (F1) (LF	S, T, U)	2 cm Red	n Muck (A10 uced Vertic) (LR (F18)	R S) (outside MLR/	
Stratified	Layers (A5)			Dep	amy Gleyed Mai pleted Matrix (F	3)					Soils (F19) (LRI Imy Soils (F20)	(P, S, I)
	Bodles (A6) (ky Mineral (dox Dark Surfac pleted Dark Sur			-	LRA 153B) Parent Mat		TE2)	
Muck Pres	sence (A8) ((LRR U)		Red	dox Depression	is (F8)		Very	Shallow D	ark Su	rface (TF12)	
	k (A9) (LRR Below Dark		(A11)		rl (F10) (LRR U pleted Ochric (F		151)	Othe	er (Explain i	n Rem	ıarks)	
Coast Pra	k Surface (A irie Redox ((A16) (MI		Um	-Manganese N bric Surface (F ta Ochric (F17)	13) (LRR P,	T, U)	W	etland hydr	ology	hytic vegetation must be presen problematic.	
Sandy Gle Sandy Re Stripped M	Matrix (S6)	(S4)		Red Pier	duced Vertic (F dmont Floodpla pmalous Bright	18) (MLRA Iln Soils (F1	150A, 150B) 9) (MLRA 149)	A)			programmente.	
Sandy Gle Sandy Re Stripped M Dark Surfe	eyed Matrix dox (S5) Matrix (S6) ace (S7) (LF	(S4) RR P, S, erved):	T, U)	Red Pier	duced Vertic (F dmont Floodpla omalous Bright	18) (MLRA Iln Soils (F1) Loamy Soils	150A, 150B) 9) (MLRA 149)	A)				
Sandy Gle Sandy Re Stripped M Dark Surfe astrictive La Type: Depth (inch	eyed Matrix dox (S5) Matrix (S6) ace (S7) (LF ayer (If obso	(S4) RR P, S, erved):	T, U)	Red Pier	duced Vertic (F dmont Floodpla	18) (MLRA Iln Soils (F1) Loamy Soils	150A, 150B) 9) (MLRA 149)	A) 149A, 153 			prosionado.	
Sandy Gle Sandy Re Stripped M Dark Surfe astrictive La Type: Depth (inch emarks;	eyed Matrix dox (S5) Matrix (S6) ace (S7) (LF ayer (If obso	(S4) RR P, S, erved):	T, U)	Rec Pie And	duced Vertic (F dmont Floodpla omalous Bright	18) (MLRA In Soiis (F1) Loamy Soiis	150A, 150B) 9) (MLRA 149)	A) 149A, 153 Hydric So)	3C, 153D)	? Ye	Y	
Sandy Gle Sandy Re Stripped M Dark Surfe Dark Surfe Dark Surfe Dark Surfe Dark Surfe Depth (Inch emarks;	eyed Matrix dox (S5) Matrix (S6) ace (S7) (LF ayer (If obse	(S4) RR P, S, erved):	T, U)	Rec Pie And	duced Vertic (F dmont Floodpla omalous Bright	18) (MLRA In Soiis (F1) Loamy Soiis	150A, 150B) 9) (MLRA 149) 5 (F20) (MLRA	A) 149A, 153 Hydric So)	SC, 153D) Dil Present	? Ye	э <u>с X</u> Na	
Sandy Gle Sandy Re Stripped M Dark Surfe Strictive La Type: Depth (inch marks;	eyed Matrix dox (S5) Matrix (S6) ace (S7) (LF ayer (If obse	(S4) RR P, S, erved):	T, U)	Rec Pie And	duced Vertic (F dmont Floodpla omalous Bright	18) (MLRA In Soiis (F1) Loamy Soiis	150A, 150B) 9) (MLRA 149) 5 (F20) (MLRA	A) 149A, 153 Hydric So)	SC, 153D) Dil Present	? Ye	э <u>с X</u> Na	
Sandy Gle Sandy Re Stripped M Dark Surfe Strictive La Type: Depth (inch marks;	eyed Matrix dox (S5) Matrix (S6) ace (S7) (LF ayer (If obse	(S4) RR P, S, erved):	T, U)	Rec Pie And	duced Vertic (F dmont Floodpla omalous Bright	18) (MLRA In Soiis (F1) Loamy Soiis	150A, 150B) 9) (MLRA 149) 5 (F20) (MLRA	A) 149A, 153 Hydric So)	SC, 153D) Dil Present	? Ye	э <u>с X</u> Na	
Sandy Gle Sandy Re Stripped M Dark Surfe sstrictive La Type: Depth (inch smarks;	eyed Matrix dox (S5) Matrix (S6) ace (S7) (LF ayer (If obse	(S4) RR P, S, erved):	T, U)	Rec Pie And	duced Vertic (F dmont Floodpla omalous Bright	18) (MLRA In Soiis (F1) Loamy Soiis	150A, 150B) 9) (MLRA 149) 5 (F20) (MLRA	A) 149A, 153 Hydric So)	SC, 153D) Dil Present	? Ye	э <u>с X</u> Na	
Sandy Gle Sandy Re Stripped M Dark Surfe Dark Surfe Dark Surfe Dark Surfe Dark Surfe Depth (Inch emarks;	eyed Matrix dox (S5) Matrix (S6) ace (S7) (LF ayer (If obse	(S4) RR P, S, erved):	T, U)	Rec Pie And	duced Vertic (F dmont Floodpla omalous Bright	18) (MLRA In Soiis (F1: Loamy Soiis	150A, 150B) 9) (MLRA 149) 5 (F20) (MLRA	A) 149A, 153 Hydric So)	SC, 153D) Dil Present	? Ye	э <u>с X</u> Na	
Sandy Gle Sandy Re Stripped M Dark Surfe astrictive La Type: Depth (inch emarks;	eyed Matrix dox (S5) Matrix (S6) ace (S7) (LF ayer (If obse	(S4) RR P, S, erved):	T, U)	Rec Pie And	duced Vertic (F dmont Floodpla omalous Bright	18) (MLRA In Soiis (F1: Loamy Soiis	150A, 150B) 9) (MLRA 149) 5 (F20) (MLRA	A) 149A, 153 Hydric So)	SC, 153D) Dil Present	? Ye	э <u>с X</u> Na	

4

Welland A

Wetland F	†
WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region Project/Site: Island Beach State Park city/county: Staside Park, Occan Sampling Date: 111	19
Applicant/Owner: Orsted State: NJ Sampling Point: OPL- Investigator(s): Stephen Sci/mour, Deidra Vallant, Section, Township, Range:	1
Landform (hillslope, terrace, etc.): ICrel Local relief (concave, convex, none): CONCAVE Skope (%): C Subregion (LRR or MLRA): LRR Icrel Lat: 39,904417 Long: Icrel Delum: Soil Map Unit Name: Hooksan Fine Sand, 0-1070 slope NWI classification: PSS1/38;E2E	2
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)	
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 sampling point locations, transects, important features, (etc.
Hydrophytic Vegetation Present? Yes No X Hydric Soll Present? Yes No X Wetland Hydrology Present? Yes No X	
Remarks:	
HYDROLOGY	- 16 - 1
Wetland Hydrology Indicators: Secondary Indicators (minimum of two required) Primary Indicators (minimum of one is required; check all that apply)	3Q)
	8)
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 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 Soits (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 Remarks) Shallow Aquitard (D3)	
Inundation Visible on Aerial Imagery (B7)	
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, previous inspections), if available:	_
Remarks:	
	1

VEGETATION (Four Strata) – Use scientific na	ames of pl	ants.		Sampling Point: UPL-1
Tree Stratum (Plot size: 30) 1. Juni perus Virginiana 2.	<u>% Cover</u> 60	Dominant <u>Species?</u>	<u>Status</u> FACV	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: Total Number of Dominant
3				Species Across All Strata:
5				Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
7				Prevalence Index worksheet: Total % Cover of:Multiply by:
	60	= Total Cov	/er	OBL species x 1 =
50% of total cover:	20% of	total cover		FACW species $x_2 = $ FAC species 40 $x_3 = 30$
Sapling/Shrub Stratum (Plot size: 15)	30	12	A11	FACU species $60 \times 4 = 240$
1. Mynca pensylvanica	- 50	<u> Y </u>	TAT .	UPL species
				Column Totals: 10 (A) 270 (B)
3				Prevalence index = $B/A = \frac{3.86}{2}$
5				Hydrophytic Vegetation Indicators:
6			<u> </u>	1 - Rapid Test for Hydrophytic Vegetation
7			<u> </u>	2 - Dominance Test is >50%
8	2 ^			3 - Prevalence Index is ≤3.0 ¹
		= Total Cov		Problematic Hydrophytic Vegetation ¹ (Explain)
50% of total cover:	20% of	total cover:	—	
Herb Stratum (Plot size:)				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				-
6				Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
8				Herb – All herbaceous (non-woody) plants, regardless
9			·	of size, and woody plants less than 3.28 ft tall.
11			· · · · ·	Woody vine - All woody vines greater than 3.28 ft in height.
12.	· · ·			
		= Total Cov	er	
50% of total cover:	20% of	total cover:		
Woody Vine, Stratum (Plot size: 30)	10	U	FAA.	
1. Smilax Rondifolla		<u> </u>	110	5. E
2				
A.				
5.				
J	Th.	= Total Cov		Hydrophytic Vegetation
50% of total cover:				Present? Yes No 🔨
Remarks: (If observed, list morphological adaptations bei		total cover.		The second
rtemarka. (ii observed, iist morphological adaptations dei	(OW).			

		Wetland F
SOIL		Sampling Point: <u>UPL-</u>
Profile Description: (Describe to the depti	n needed to document the indicator or confirm	the absence of Indicators.)
Depth <u>Matrix</u>	Redox Features	-
$\frac{(\text{inches})}{D-4''}$ $\frac{Color(\text{moist})}{3D}$ $\frac{\%}{DVR}$ $\frac{\%}{DDD}$	Color (moist) % Type' Loc ²	Texture Remarks
or the second los		hie sandy oranic loam
4"-20" 5/2 104R 100		medium dry sand
		1
	· · · · · · · · · · · · · · · · · · ·	
¹ Type: C=Concentration, D=Depletion, RM=F	Reduced Maldy MS=Masked Sand Grains	² Location: PL=Pore Lining, M=Matrix.
Hydric Soli Indicators: (Applicable to all L		Indicators for Problematic Hydric Solis ³ :
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)	Pledmont Floodplain Soils (F19) (LRR P, S, T)
Stratified Layers (A5) Organic Bodies (A6) (LRR P, T, U)	Depleted Matrix (F3) Redox Dark Surface (F6)	Anomalous Bright Loamy Soils (F20)
Organic Bodies (Ab) (LRR P, T, U) 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)	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, *	
Coast Prairie Redox (A16) (MLRA 150A) Sandy Mucky Mineral (S1) (LRR O, S)	 Umbric Surface (F13) (LRR P, T, U) Delta Ochric (F17) (MLRA 151) 	wetland hydrology must be present, unless disturbed or problematic.
Sandy Gleyed Matrix (S4)	Reduced Vertic (F18) (MLRA 150A, 150B)	umess disturbed of problematic.
Sandy Redox (S5)	Piedmont Floodplain Soils (F19) (MLRA 149	9A)
Stripped Matrix (S6)	Anomalous Bright Loamy Solis (F20) (MLRA	A 149A, 153C, 153D)
Dark Surface (S7) (LRR P, S, T, U)		
Restrictive Layer (if observed):	2	
Type:	- hone	Hydric Soil Present? Yes No X
Depth (Inches):		Hydric Soll Present? Yes No
Remarks:		
Remarks;		
Remarks:		

·, `

¥

Wetland WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region Beach State City/County: Scaside Nath Occan Sampling Date: Port Project/Site: Sampling Point: W Applicant/Owner: State: ____ Investigator(s): Store rymour, heid Valiant Section, Township, Range: Tre Landform (hillslope, terrace, etc.) Local relief (concave, convex, none): Slope (%): Lat: 39,904417 RR Long: -74.08L66 Subregion (LRR or MLRA): Datum NWI classification: PSS 0-1090 slupe Soil Map Unit Name: How San (If no, explain in Remarks.) Are climatic / hydrologic conditions on the site typical for this time of year? Yes No Are Vegetation _____, Soil _____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes 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? No Is the Sampled Area Hydric Soli Present? Yes X No No within a Wetland? Welland Hydrology Present? Yes No Remarks: We Hand 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 (86) ___ 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 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) ____ Thin Muck Surface (C7) Geomorphic Position (D2) _ Iron Deposits (B5) Other (Explain in Remarks) Shallow Aguitard (D3) Inundation Visible on Aerial Imagery (B7) FAC-Neutral Test (D5) Water-Stained Leaves (B9) Sphagnum moss (D8) (LRR T, U) Field Observations: ___ No ____ Depth (inches): __ __ No ____ Depth (inches): _ Surface Water Present? Water Table Present? Wetland Hydrology Present? Yes X No Saturation Present? Depth (inches): (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 storaget laydown area. Portions close to upland edge have dense cathonier, grades off into reed monoculture. Westerly edge opens up to bay. Dense common reed 10-12 ft high night to the waterline. Remarks:

VEGETATION (Four Strata) - Use scientific names of plants.

Sampling Point: WLB WET

Tree Stratum (Plot size: 30)	Absolute	Dominan	t Indicator	Dominance Test worksheet:
	<u>% Cover</u>	Species		Number of Dominant Species
1. JUNIPEROS VIGINIANO		_Y_	FACU	That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant 4
3				Species Across All Strata: (B)
4				Percent of Dominant Species 75
5				That Are OBL, FACW, or FAC:(A/B)
6				
7				Prevalence Index worksheet:
8				Total % Cover of: Multiply by:
	20	= Total Co	ver	OBL species $x_1 = \frac{1000}{1000}$
50% of total cover:	20% of	total cove	r:	FACW species $60 \times 2 = 120$
Sapling/Shrub Stratum (Plot size: 15				FAC species $35 \times 3 = 75$
1. Vaccinium corymbosum	15	Ŷ	FACW	FACU species 20 x 4 = 80
	2		• •••••••••	UPL species x 5 =
3				Column Totals: 105 (A) 275 (B)
				2/2
4				Prevalence index = $B/A = 2.62$
5				Hydrophytic Vegetation Indicators:
6				1 - Rapid Test for Hydrophytic Vegetation
7			· ·	2 - Dominance Test is >50%
8	12		•	X 3 - Prevalence Index is ≤3.0 ¹
10000 M		= Total Co	ver	Problematic Hydrophytic Vegetation ¹ (Explain)
50% of total cover:	20% of	total cove	r:	
Herb Stratum (Plot size:)	110	15	FRAN	^t Indicators of hydric soil and wetland hydrology must
1. Phracmites australis	40	<u> </u>	FIXW	be present, unless disturbed or problematic.
2. Onoctea sensibilis	5	N	FACW	Definitions of Four Vegetation Strata:
3				Tran Mandu planta avaluding vince 2 in (7.6 cm) or
4				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
5				height.
6				Santing/Shrub - Woody plants, systuding vises, loss
7				Sapilng/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
8				
				Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
9				of size, and woody plants less than 5.26 it tail.
10				Woody vine - All woody vines greater than 3.28 ft in
11			·	height.
12	-			
	45	= Total Co	ver	
50% of total cover:	20% of	total cove	r:	
Woody Vine Stratum (Plot size: 30)	~	1.1	Fo d	
1. Smilax Notunditolia	25	<u> Y </u>	FAC	
2			· · · · · · · · · · · · · · · · · · ·	
3				
4.				
5.				lundare built
	15	= Total Co		Hydrophytic Vegetation
50% of total cover:		total cover		Present? Yes X No
Remarks: (if observed, list morphological adaptations bel		LOLAI COVE	•	
Remarks: (if observed, list morphological adaptations beild	ow).			

US Army Corps of Engineers

JUIL

jî de

Sampling Point: <u>WLB</u>WET

Profile Desc	ription: (Describe t	o the depth ne	eded to docur	nent the In	dicator or confir	m the absence	of Indicators.)
Depth	Matrix		Redo	x Features		0	
(inches)	Color (moist)		olor (moist)	%	Type' Loc2	Texture	Remarks
0-4"							
	CH IND	100		• •			
<u>4"-00"</u>	6/1 104R	100 _				•	
						•	······································
				· ·			
						· · · · · · · · · · · · · · · · · · ·	
17.00				· ·		2	
	oncentration, D=Depl						PL=Pore Lining, M=Matrix.
1	ndicators: (Applica	IDIO TO AII LKK			•		for Problematic Hydric Solis ³ :
Letter Histosol	(A1)	_			e (S8) (LRR S, T,	U) 1 cm M	uck (A9) (LRR O)
Histic Ep	pipedon (A2)		_ Thin Dark Su	rface (S9) (LRR S, T, U)	2 cm M	uck (A10) (LRR S)
Black Hi	stic (A3)	_	Loamy Muck	y Mineral (F	1) (LRR O)	Reduce	ed Vertic (F18) (outside MLRA 150A, B)
Hydroge	n Sulfide (A4)		Loamy Gleye				ont Floodplain Soils (F19) (LRR P, S, T)
	Layers (A5)		_ Depleted Ma				lous Bright Loamy Soils (F20)
-	Bodles (A6) (LRR P,	т. U) —	_ Redox Dark	• •)		A 153B)
	cky Mineral (A7) (LR		_ Depieted Da		-		rent Material (TF2)
	esence (A8) (LRR U)		_ Redox Depre				
	,						nallow Dark Surface (TF12)
	ck (A9) (LRR P, T)		_ Mari (F10) (L			Other (i	Explain in Remarks)
	Below Dark Surface	(A11) _	_ Depleted Oc			a	
	rk Surface (A12)	_			s (F12) (LRR O, P		ators of hydrophytic vegetation and
	airie Redox (A16) (M		Umbric Surfe	ce (F13) (L	RR P, T, U)	wet	and hydrology must be present,
Sandy M	lucky Mineral (S1) (L	RR O, S) _	Delta Ochric				ss disturbed or problematic.
🛛 🔔 Sandy G	leyed Matrix (S4)		_ Reduced Ver	tic (F18) (N	LRA 150A, 150B	5)	
Sandy R	edox (S5)		Piedmont Flo	odplain So	Is (F19) (MLRA 1	49A)	
Stripped	Matrix (S6)				y Soils (F20) (ML		153D)
Dark Sur	face (S7) (LRR P, S,	т. U) —	-	•			,
	ayer (If observed):	., .,				- T	
1							
Туре:							
Depth (inc	:hes):					Hydric Soll	Present? Yes No
Remarks:							

Wetland B

Wetland D
WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region
Project/Site: Island Bcach State Park City/County: Scasside Park Sampling Date: 11/19/2 Applicant/Owner: Orsted State: NJ Sampling Point: WLB-UP Investigator(s): Stere Sey Mour, Deld fa Valinsection, Township, Range:
Hydrophytic Vegetation Present? Yes No No Is the Sampled Area Hydric Soll Present? Yes No No Wetland? Yes No X Wetland Hydrology Present? Yes No X Wetland? Yes No X Remarks: Image: No Imag
Welland B HYDROLOGY
Wetland Hydrology Indicators: Secondary Indicators (minimum of two required) Primary Indicators (minimum of one is required; check all that apply)
Field Observations; Surface Water Present? YesNo_XDepth (inches); Water Table Present? YesNo_XDepth (inches); Saturation Present? YesNo_XDepth (inches); Saturation Present? YesNo_XDepth (inches); (includes capillary fringe) No_XDepth (inches); Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available;
Remarks:

21		ants.		Sampling Point: ULB-
JUNI porus Virginiana		Species	t Indicator Status FIXCU	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC:
				Total Number of Dominant Species Across All Strata:
				Percent of Dominant Species 33 (A/B)
			•	Prevalence Index worksheet:
		= Total Co	ver	Total % Cover of: Multiply by: OBL species
50% of total cover:		total cove		FACW species X 2 = FAC species X 3 =
Myrica pensy luanica-	20	<u> </u>	NI	FACU species x 4 = 280 UPL species x 5 =
				Column Totals: <u>90</u> (A) <u>320</u> (B)
				Prevalence index = $B/A = 3,56$
				Hydrophytic Vegetation Indicators:
- C				1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50%
				$3 - Prevalence Index is \leq 3.0^{1}$
50% of total cover:	20	= Total Co total cove		Problematic Hydrophytic Vegetation ¹ (Explain)
Dragmites australis	20	Y	FACW	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1	1.0			Definitions of Four Vegetation Strata:
			·	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
			•	Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 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 height.
	20	= Total Co	ver	
50% of total cover: odv Vine Stratum (Plot size:3 O)	20% of	total cover	r:	
Patthenocissus quinquepolia	10	<u>Y</u>	FACV	
				Hydrophytic
	- 1D -	= Total Co	ver	Vegetation Y

.

SOIL		Sampling Point: <u>WLB-</u> UPL
Profile Description: (Describe to the dep	th needed to document the indicator or confirm	
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹ Loc ²	Texture Remarks
6"-3" 3/2 104R 100		sandy organic loam
3"-20" 5/2 104R 100		
<u>5 00 50 10 TA 100</u>	· · · · · · · · · · · · · · · · · · ·	sand
	Reduced Matrix, MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix.
Hydric Soli Indicators: (Applicable to all	LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Solis ³ :
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 Soils (F20)
Crganic Bodies (A6) (LRR P, T, U) 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)	
Thick Dark Surface (A12)	Iron-Manganese Masses (F12) (LRR O, P, 1	7) ³ Indicators of hydrophytic vegetation and
Coast Prairie Redox (A16) (MLRA 1504		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)	
Sandy Redox (S5)	Piedmont Floodplain Solls (F19) (MLRA 149	,
Stripped Matrix (S6)	Anomalous Bright Loamy Soils (F20) (MLRA	(149A, 153C, 153D)
Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed):		
	10000	
Туре:	- hone	X
Depth (inches):	- observed	Hydric Soll Present? Yes No
Remarks:		
		a.
25		
a		
8		

n y 🔨 🐨

Welland C

Subregion (LRR or MLRA):KK Soil Map Unit Name: HOOLSAN Fil Are climatic / hydrologic conditions on the si Are Vegetation, Soil, or Hydi Are Vegetation, Soii, or Hydi SUMMARY OF FINDINGS – Attac	te typical for this time of year? rology significantly distu rology naturally problem	SUP C Yes No urbed? Are "Normal natic? (If needed, e	74,088430 petum: NWI classification: <u>PSS438</u> , E2E (If no, explain in Remarks.) Circumstances' present? Yes X No posplain any answers in Remarks.) poss, transects, important features, etc
Hydrophytic Vegetation Present? Hydric Soll Present? Wetland Hydrology Present? Remarks:	res X No res X No res X No res A no	Is the Sampled Area within a Wetland?	ves_X_ No
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	 Aquatic Fauna (B13) Marl Deposits (B15) (Lf Hydrogen Sulfide Odor Oxidized Rhizospheres Presence of Reduced In 	(C1) along Living Roots (C3) on (C4)	Secondary Indicators (minimum of two required) Surface Soil Cracks (86) Sparsely Vegetated Concave Surface (88) Drainage Patterns (810) Moss Trim Lines (816) Dry-Season Water Table (C2) Crayfish Burrows (C8)
Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (I Water-Stained Leaves (B9) Field Observations:		rks)	Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Sphagnum moss (D8) (LRR T, U)
Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes (includes capillary fringe) Yes Describe Recorded Data (stream gauge, m	No X Depth (Inches): No Depth (inches): X No Depth (inches): D nonitoring well, aerial photos, pr	STRIC Wetland H	lydrology Present? Yes X No
Remarks:			

-

Atlantic and Gulf Coastal Plain Region - Version 2.0

Wetland C

Tree Stratum (Plot size: 30)		Dominant		Dominance Test worksheet:
Iree Stratum Plot size: JO) 1.	<u>% Cover</u>	Species?	<u>Status</u>	Number of Dominant Species 3 (A)
2				
3				Species Across All Strata:
4				Percent of Dominant Species 100
5				That Are OBL, FACW, or FAC:
3				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
3				OBL species x1 =
50% of total cover:		= Total Cov total cover		FACW species $10 \times 2 = 220$
Sapling/Shrub Stratum (Plot size:)	20% 0	total cover	·	FAC species $20 \times 3 = 60$
Vaccinium Corvinhosum	20	Ŷ	FACW	FACU species x 4 =
2.				UPL species $x 5 = -1000$
3				Column Totals: (30 (A) 280 (B)
4				Prevalence index = B/A ≈
5				Hydrophytic Vegetation Indicators:
3				1 - Rapid Test for Hydrophytic Vegetation
7			<u> </u>	Z - Dominance Test is >50%
3	20			X 3 - Prevalence Index is ≤3.0 ³
50% of total cover:				Problematic Hydrophytic Vegetation ¹ (Explain)
Herb Stratum (Plot size: 5			·	
Phracmites australis	90	Ŷ	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
ł				more in diameter at breast height (DBH), regardless of
5				height.
B				Sapiling/Shrub – Woody plants, excluding vines, less
·				than 3 in. DBH and greater than 3.28 ft (1 m) tall.
3 9			<u> </u>	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
IO				
1				Woody vine – All woody vines greater than 3.28 ft in height.
2			27	in signi
	90	= Total Cov	rer	
50% of total cover:		total cover		
Voody Vine Stratum (Plot size: 30)	20	1)	FAC	
Smilax rotunditolia		<u> </u>	Inc	
	- 14 C			
			<u> </u>	
i				
5 <u>.</u>	- 20	= Total Cov	/er	Hydrophytic Vegetation
50% of total cover:	20% of	total cover		Present? Yes <u>No</u>
Remarks: (If observed, list morphological adaptations be				

.

Atlantic and Gulf Coastal Plain Region - Version 2.0

Sampling Point: <u>WLC</u> - WET SOIL Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Depth Matrix **Redox Features** Color (moist) ____% __Type' __Loc² (inches Color (moist) % Texture 100 LOYK vam Deaty su 100 medium ²Location: PL=Pore Lining, M=Matrix. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Hydric Soli indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Solis³: ____ Polyvalue Below Surface (S8) (LRR S, T, U) ____ 1 cm Muck (A9) (LRR O) Histosol (A1) ____ Histic Eplpedon (A2) ____ 2 cm Muck (A10) (LRR S) Thin Dark Surface (S9) (LRR S, T, U) Black Histic (A3) Loamy Mucky Mineral (F1) (LRR O) Reduced Vertic (F18) (outside MLRA 150A, B) X Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) (LRR P, S, T) Stratified Layers (A5) Depleted Matrix (F3) Anomalous Bright Loamy Solis (F20) 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) Mari (F10) (LRR U) Other (Explain in Remarks) Depieted Below Dark Surface (A11) Depleted Ochric (F11) (MLRA 151) Thick Dark Surface (A12) Iron-Manganese Masses (F12) (LRR O, P, T) ³Indicators of hydrophytic vegetation and Coast Prairie Redox (A16) (MLRA 150A) ___ Umbric Surface (F13) (LRR P, T, U) 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 149A) X Stripped Matrix (S6) Anomalous Bright Loamy Solls (F20) (MLRA 149A, 153C, 153D) Dark Surface (S7) (LRR P, S, T, U) NONE OBSERVED Restrictive Layer (if observed): Type: No Depth (Inches): Hydric Soll Present? Yes live reed grass rhizomes, plant fibers + peat in surficial soils. Remarks:

Welland C

Welland C

WETLAND DETERMINATION DATA FORM - Atlantic and Guif Coastal Plain Region Project/Site:	_
Hydrophytic Vegetation Present? Yes No X Is the Sampled Area Hydric Soil Present? Yes No X Is the Sampled Area Wetland Hydrology Present? Yes No X Is the Sampled Area	
Remarks: Wettand C - north side of access wad 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 (hat apply) Surface Soil Cracks (B6)	
High Water Table (A2) Marl Deposits (B15) (LRR U) Drainage Patterns (B10)	
Saturation (A3)	
Water Marks (B1) Oxidized Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2)	
Video Marks (01) Ovid260 (Min2dsprinted along Living (Cots (Cot) Dry-Coason (Video Fable (C2) Sediment Deposits (B2) Presence of Reduced Iron (C4) Crayfish Burrows (C8)	
Crayital Deposits (B2) Presence of Reduced For (C4) Crayital Defosits (C5) Crayital Defosits (C6) Saturation Visible on Aerial Imagery (C9)	
Algal Mat or Crust (B4) Thin Muck Surface (C7) Geomorphic Position (D2)	
Inga mat of order (D4) Thin Mode outlace (07) Generic plate Position (D2) Iron Deposits (B5) Other (Explain in Remarks) Shallow Aquitard (D3)	
Inundation Visible on Aerial Imagery (B7) FAC-Neutral Test (D5)	1
Water-Stained Leaves (B9) Sphagnum moss (D8) (LRR T, U)	ł
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, previous inspections), if available:	
Remarks:	-

.

÷

Atlantic and Gulf Coastal Plain Region - Version 2.0

Wetland C

	names of plants.	Sampling Point: WLC-U
ree Stratum (Plot size: 30)	Absolute Dominant Indicator <u>% Cover Species?</u> Status <u>70</u> Y FACU	Dominance Test worksheet:
		Total Number of Dominant
		Percent of Dominant Species 50
		That Are OBL, FACW, or FAC: (A/B) Prevalence Index worksheet;
50% of total cover:	= Total Cover 20% of total cover:	FACW species $x^2 = $ FAC species $20^{-1} x^3 = 60^{-1}$
Viburnum dentajum	10 Y FAC	FACU species \underline{IO} x 4 = $\underline{320}$
Myrica pensylvanica	<u> 20 V NJ</u>	UPL species $x5 =$ Column Totals: 100 (A) 386 (B)
		Prevalence Index = B/A = 3.8 Hydrophytic Vegetation Indicators;
		1 - Rapid Test for Hydrophytic Vegetation
	30 = Total Cover	2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹
	20% of total cover:	Problematic Hydrophytic Vegetation ¹ (Explain)
		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
		Definitions of Four Vegetation Strata: Tree - Woody plante, excluding vines, 3 in. (7.6 cm) or
		more in diameter at breast height (DBH), regardless of height.
		Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
· · · · · · · · · · · · · · · · · · ·		Woody vine - All woody vines greater than 3.28 ft in height.
	= Total Cover	
50% of total cover:	20% of total cover:	
Smilax Windinvice) Smilax Windinvice	10 Y FAC	
		Hydrophytic Vegetation
	= Total Cover 20% of total cover;	Present? Yes No X
50% of total cover: marks: (If observed, list morphological adaptations b		

ž

US Army Corps of Engineers

 $\mathbf{\hat{z}}$

Atlantic and Gulf Coastal Plain Region - Version 2.0

epth <u>Matrix</u> <u>color (molst)</u> % <u>00⁴-7</u> <u>312 104R</u> <u>100</u> <u>1-20⁴</u> <u>572 107R</u> <u>100</u> <u></u>	th needed to document the indicator or confirm t Redox Features Color (moist) % Type1 Loc2	Sempling Point: <u>W.C</u> the absence of Indicators.) <u>Texture</u> <u>Remarks</u> <u>SCINCY ORGINIC LOOM</u> <u>dry SCINC</u>
dric Soll Indicators: (Applicable to all 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 150/ Sandy Mucky Mineral (S1) (LRR O, S) Sandy Gleyed Matrix (S4) Sandy Redox (S5)	 Polyvalue Below Surface (S8) (LRR S, T, U) Thin Dark Surface (S9) (LRR S, T, U) Loamy Mucky Mineral (F1) (LRR O) Loamy Gieyed 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 A) Umbric Surface (F13) (LRR P, T, U) Delta Ochric (F17) (MLRA 151) Reduced Vertic (F18) (MLRA 150A, 150B) Piedmont Floodplain Soils (F19) (MLRA 149A) 	 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outside MLRA 150A, B) Piedmont Floodplain Soils (F19) (LRR P, S, T) Anomalous Bright Loamy Solls (F20) (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) 7) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) strictive Layer (If observed): Type: Depth (inches): marks:	Anomalous Bright Loamy Soils (F20) (MLRA 	Hydric Soli Present? Yes <u>No X</u>

• `

Atlantic and Gulf Coastal Plain Region - Version 2.0

3



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		



Table of Contents

1.	Project De	scription5
2.	Methods	
2.1	Desktop R	eview7
2.2	Field Surve	ey7
2.3	Ecological	Community Assessment7
3.	Results	
3.1	Desktop R	eview8
3.1.1	BLE WRA	
	3.1.1.1	Proposed Onshore Substation at BL England Generating Station8
	3.1.1.2	Proposed Export Cable Route - Roosevelt Boulevard15
3.2	Wetland D	elineation Field Survey21
3.2.1	BLE WRA	
	3.2.1.1	Proposed Onshore Substation at BL England Generating Station21
	3.2.1.2	Proposed Export Cable Route - Roosevelt Boulevard
3.3	Wildlife	
3.3.1	BLE WRA	
	3.3.1.1	Proposed Onshore substation at BL England Generating Facility27
	3.3.1.2	Proposed Export Cable Route - Roosevelt Boulevard
3.4	Species-S	pecific Assessment
3.4.1	BLE WRA	
4.	Literature	Cited

List of Tables

Table 3.1.1-1.	Soil Map Units within Project Review Area – BL England	9
Table 3.1.1-2.	Soil Map Units within Project Review Area - Roosevelt Boulevard	
Table 3.1.1-3.	Summary of FEMA Flood Hazard Zones within Project Review Area	
Table 3.2.1-1.	Summary of Wetland Delineation Field Survey Results - BL England	
Table 3.2.1-2.	Summary of Wetland Delineation Field Survey Results - Roosevelt Boulevard	
Table 3.6.1-1.	Federal and State endangered and threatened species with potential to occur within the	
	BL England Project Area.	28
	8 ,	

List of Figures

Figure 1-1.	Project Overview Figure with WRAs.	6
	NJDEP Watershed Management Areas Map	
	NJDEP Wetlands Map – BL England	
	NWI Wetlands Map - BL England	

Ocean Wind

Figure 3.1.1-4.	FEMA Preliminary Flood Hazard Map – BL England	14
	NJDEP Wetlands Map - Roosevelt Boulevard	
	NWI Wetlands Map – Roosevelt Boulevard	
Figure 3.1.1-8.	FEMA Preliminary Flood Hazard Map – Roosevelt Boulevard	20
Figure 3.2.1-1.	Summary of Wetland Delineation Field Survey Results - BL England	23
Figure 3.2.1-2.	Field Survey Wetland Delineation Map – Roosevelt Boulevard	26
-		

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**).



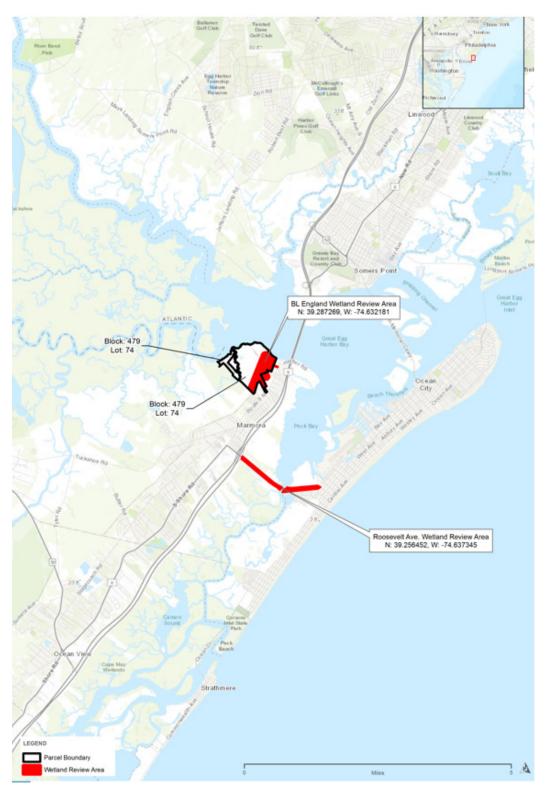


Figure 1-1. Project Overview Figure with WRAs.

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 scrub/shrub 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.

Map Unit Symbol	Map Unit Name	Percent of Project Review Area	Soil Series Component	% Component	Hydric Rating
BEXAS soils, 0 top 2			Berryland	50	Yes
	Berryland and Mullica soils, 0 top 2 percent	33.4%	Mullica	40	Yes
	slopes, occasionally flooded	55.4 %	Atsion	5	Yes
			Manahawkin	5	Yes
			Downer	80	No
	Downer sandy loam, 2		Galestown	10	No
DoeBO	to 5 percent slopes, Northern Tidewater Area	3.7%	Ingleside	5	No
			Hammonton	5	No
	Galloway loamy sand, 0 to 5 percent slopes	23.9%	Galloway	85	No
GamB			Downer	5	No
			Atsion	5	Yes
			Mullica	5	Yes
			Hammonton and similar soils	85	No
HboA	Hammonton sandy loam, 0 to 2 percent	11.1%	Mullica	5	Yes
	slopes	11.170	Atsion	5	Yes
			Fallsington	5	Yes

Table 3.1.1-1. Soil Map Units within Project Review Area – BL England

Ocean Wind

An Ørsted & PSEG project

Map Unit Symbol	Map Unit Name	Percent of Project Review Area	Soil Series Component	% Component	Hydric Rating
			Hooksan	90	No
HorDr	Hooksan sand, 2 to 15 percent slopes, rarely flooded	0.3%	Pawcatuck	5	Yes
			Beaches	5	Yes
		14.7%	Pawcatuck	60	Yes
	Pawcatuck- Transquaking complex, 0 to 1 percent slopes, very frequently flooded		Transquaking	25	Yes
PdwAv			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

Ocean Wind

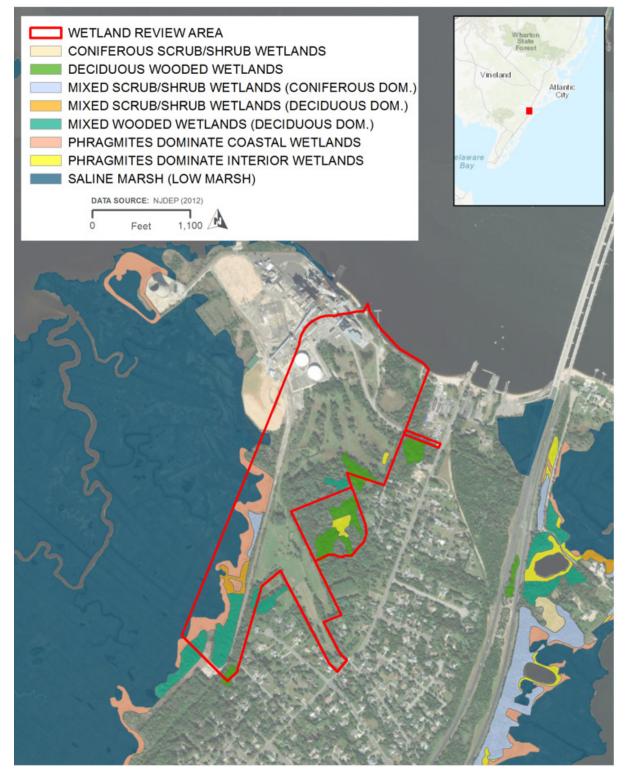


Figure 3.1.1-2. NJDEP Wetlands Map – BL England



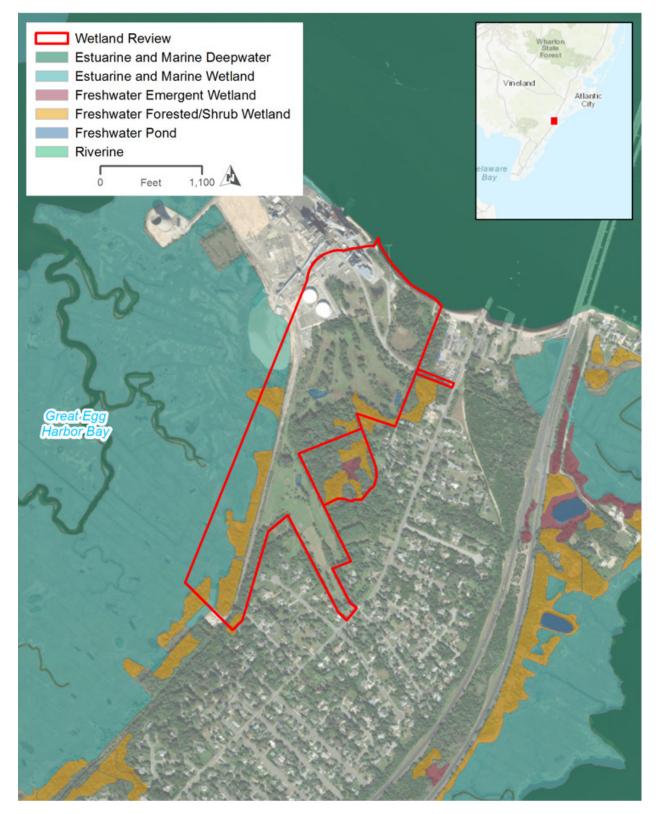


Figure 3.1.1-3. NWI Wetlands Map – BL England





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.

Ocean Wind

An Ørsted & PSEG project

Map Unit Symbol	Map Unit Name	Percent of Project Review Area	Soil Series Component	% Component	Hydric Rating
Annoquinimink	Appoquinimink-		Appoquinimink	40	Yes
AptAv	Transquaking- Mispillion complex, 0	1.6%	Transquaking	30	Yes
ΑριΑν	to 1 percent slopes,	1.0 /8	Mispillion	25	Yes
	very frequently flooded		Hammonton	5	Yes
			Pawcatuck	60	Yes
	Pawcatuck- Transquaking	27.5%	Transquaking	25	Yes
PdwAv	complex, 0 to 1 percent slopes, very frequently flooded		Berryland	5	Yes
			Appoquinimink	5	Yes
			Mullica	5	Yes
UR	Urban land	38.0%	Urban Land	95	No
On	Orban land	50.0 %	Udorthents	5	No
	Urban land-		Urban Land, sulfidic substratum	60	No
USPSAS	Psamments, sulfidic substratum complex, 0	28.1%	Psamments, sulfidic substratum	30	No
	to 2 percent slopes, occasionally flooded		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 water-stained 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.

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

Table 2.2.1.1 Summar	of Watland Dalinaatia	n Field Survey Pee	ulto PI England
Table 3.2.1-1. Summary	y of welland Defineation	i rielu Sulvey nes	uits – DL Eligialiu



An Ørsted & PSEG project

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				

FACW= Facultative Wetland species

FAC = Facultative species

OBL = Obligate species

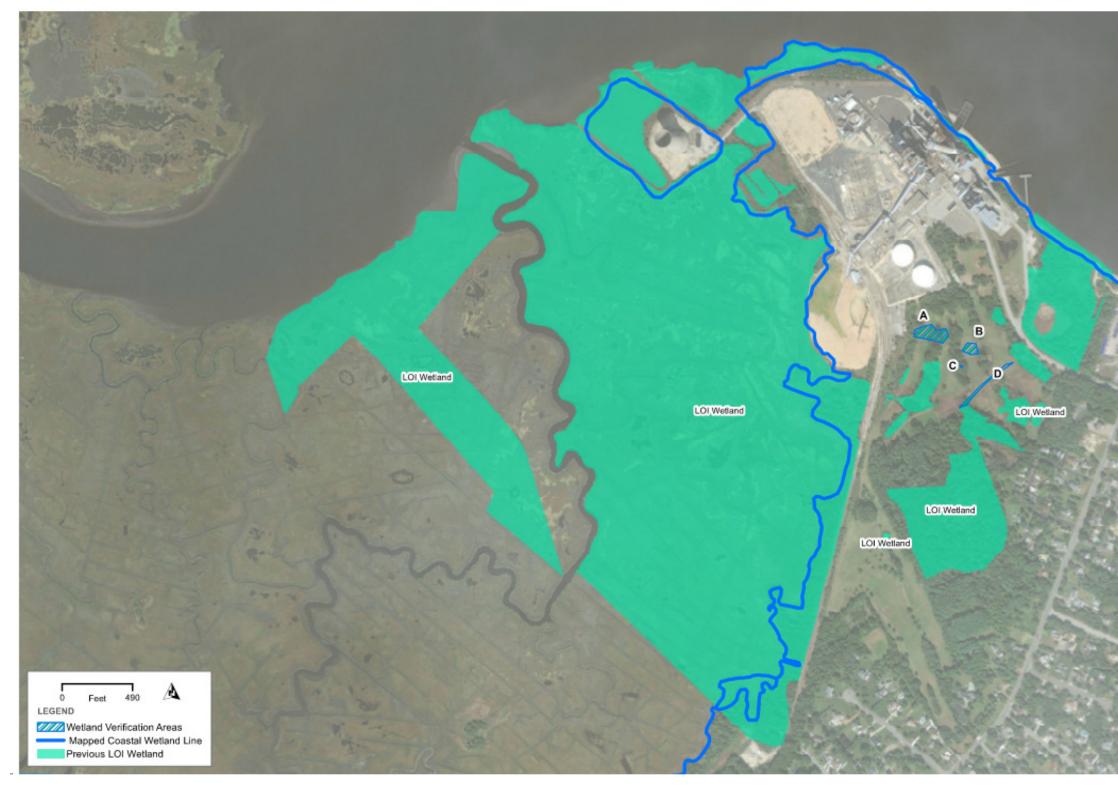


Figure 3.2.1-1. Summary of Wetland Delineation Field Survey Results – BL England







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.

<u>Wetland C</u> – 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.



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

Table 3.2.1-2. Summary of Wetland Delineation Field Survey Results – Roosevelt Boulevard

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

- Beans, B.E., and Niles, L. (2003). Endangered and Threatened Wildlife of New Jersey. Rutgers University Press. P. 1-300.
- Conserve Wildlife Foundation of New Jersey. (2019). New Jersey endangered and threatened species field guide: Eastern box turtle. Accessed July 31, 2019 at www.conservewildlife nj.org/species/fieldguide/.
- Cowardin, L.M., Carter, V., Golet, F.C. and LaRoe, E.T. (1979). *Classification of Wetland and Deepwater Habitats of the United States.* Washington, D.C.: U.S. Department of the Interior, Fish and Wildlife Service.
- Environmental Laboratory. (1987). *Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1.* Vicksburg, MS: U.S. Army Engineer Waterways Experiment Station.
- Jersey Central Power & Light Company, (JCP&L) (1972). *Oyster Creek Nuclear Generating Station Environmental Report*. Jersey Central Power & Light Company, 300 Madison Ave. Morristown, NJ 07960.



- United States Department of Agriculture (USDA): Natural Resources Conservation Service. (2015). *Web Soil Survey*. Retrieved from United States Department of Agriculture, Natural Resources Conservation Service: <u>http://websoilsurvey.nrcs.usda.gov/</u>. Accessed 8 June 2021.
- U.S. Army Corps of Engineers (USACE). (2005). *Regulatory Guidance Letter No. 05-05: Ordinary High Water Mark Identification.* Don T. Riley, Major General, US Army, Director of Civil Works.
- U.S. Army Corps of Engineers. (2010). *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0).* ed. J.S. Wakely, R.W. Lichvar, and C.V. Noble, ERDC/EL TR-09-19. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- 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



United States Department of Agriculture

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 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.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Preface	
How Soil Surveys Are Made	5
Soil Map	
Soil Map	9
Legend	10
Map Unit Legend	11
Map Unit Descriptions	11
Cape May County, New Jersey	13
BEXAS—Berryland and Mullica soils, 0 to 2 percent slopes,	
occasionally flooded	13
DoeBO—Downer sandy loam, 2 to 5 percent slopes, Northern	
Tidewater Area	
EveB—Evesboro sand, 0 to 5 percent slopes	16
GamB—Galloway loamy sand, 0 to 5 percent slopes	18
HboA—Hammonton sandy loam, 0 to 2 percent slopes	19
HorDr—Hooksan sand, 2 to 15 percent slopes, rarely flooded	21
PdwAv—Pawcatuck-Transquaking complex, 0 to 1 percent slopes,	
very frequently flooded	22
UR—Urban land	24
WATER—Water	
Soil Information for All Uses	
Suitabilities and Limitations for Use	26
Land Classifications	
Hydric Rating by Map Unit	26
Soil Properties and Qualities	
Soil Physical Properties	31
Organic Matter	
Saturated Hydraulic Conductivity (Ksat)	34
Surface Texture	
Soil Qualities and Features	
Drainage Class	43
Drainage Class	
Hydrologic Soil Group	49
Water Features	
Depth to Water Table	53
Flooding Frequency Class	
Ponding Frequency Class	
References	66

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



	MAP L	EGEND)	MAP INFORMATION
Area of Int	terest (AOI) Area of Interest (AOI)	8	Spoil Area Stony Spot	The soil surveys that comprise your AOI were mapped at 1:24,000.
Soils	Soil Map Unit Polygons Soil Map Unit Lines Soil Map Unit Points	©© ☆	Very Stony Spot Wet Spot Other	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
Special (0)	Point Features Blowout Borrow Pit	Water Fea	Streams and Canals	contrasting soils that could have been shown at a more detailed scale.
*	Clay Spot Closed Depression Gravel Pit	Transport	Rails Interstate Highways	Please rely on the bar scale on each map sheet for map measurements. Source of Map: Natural Resources Conservation Service
* * ©	Gravelly Spot Landfill	* *	US Routes Major Roads Local Roads	Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857) Maps from the Web Soil Survey are based on the Web Mercator
۸. جه	Lava Flow Marsh or swamp Mine or Quarry	Background Aerial Photography	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.	
0 0 ~	Miscellaneous Water Perennial Water Rock Outcrop			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
+	Saline Spot Sandy Spot			Survey Area Data: Version 15, Sep 16, 2019 Soil map units are labeled (as space allows) for map scales
⊕ ♦ ♦	Severely Eroded Spot Sinkhole Slide or Slip			1:50,000 or larger. Date(s) aerial images were photographed: Mar 25, 2011—Mar 26, 2011
ø	Sodic Spot			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%
dwAv 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 Cg2 - 52 to 60 inches: sand

Properties and qualities

Slope: 0 to 5 percent *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.

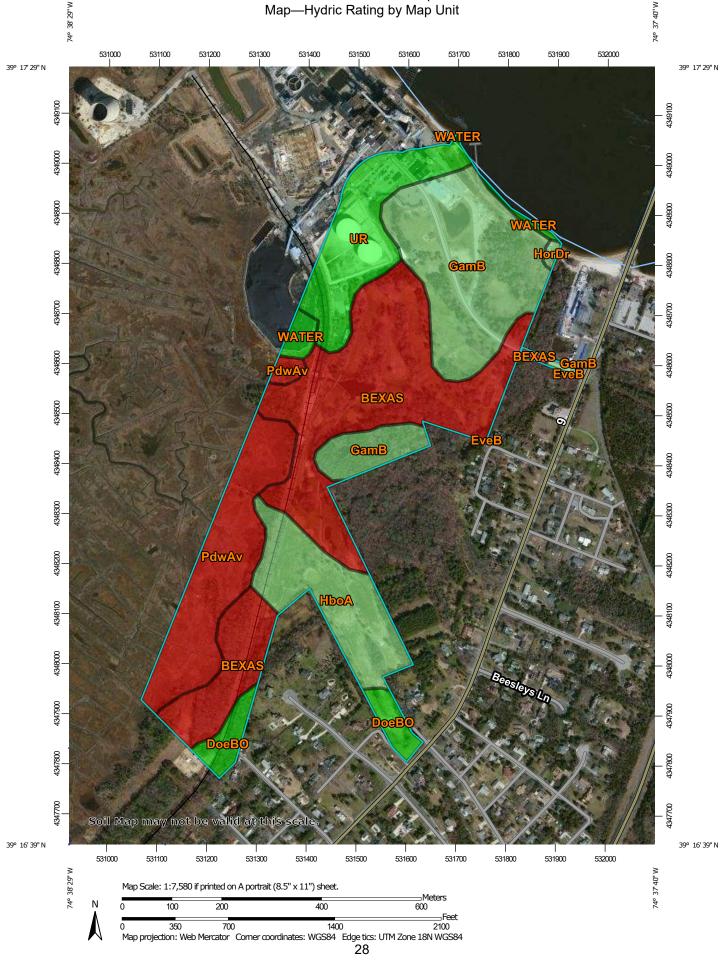
Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

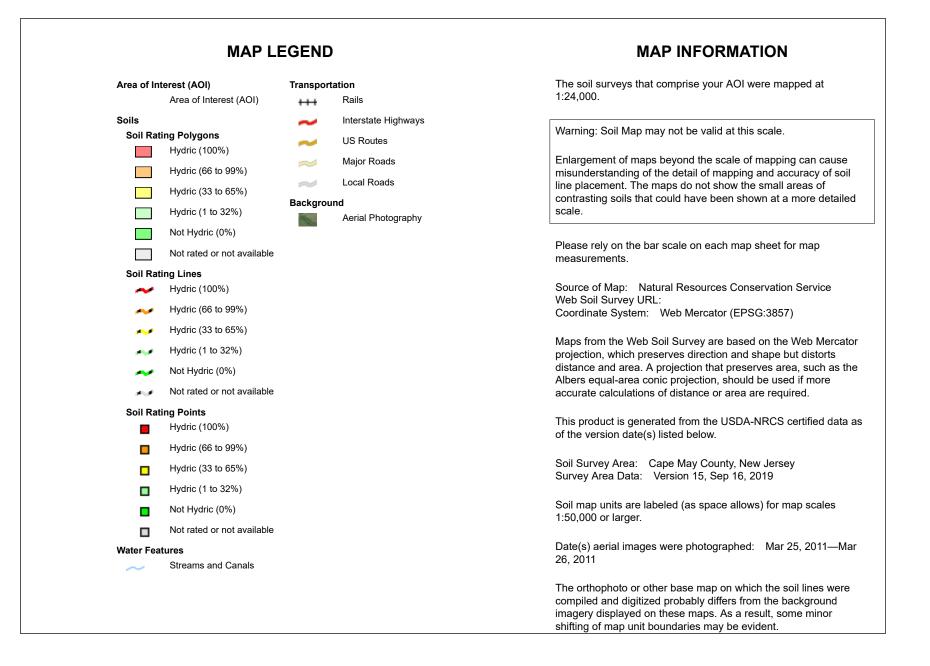
Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

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.

Custom Soil Resource Report Map—Hydric Rating by Map Unit





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 Inter	est	1	108.3	100.0%

Table—Hydric Rating by Map Unit

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.

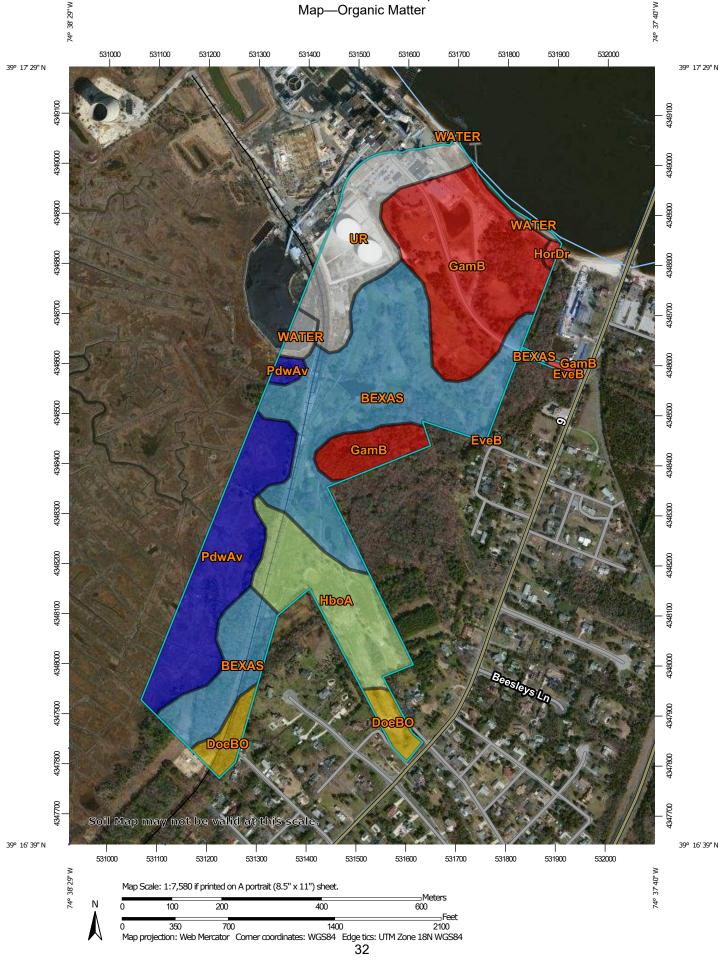
Organic Matter

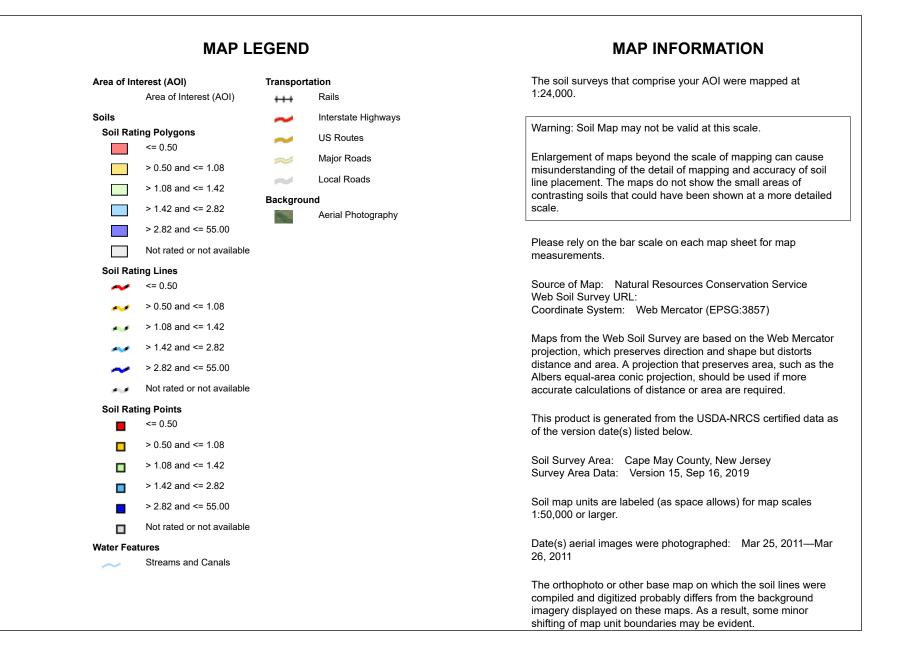
Organic matter is the plant and animal residue in the soil at various stages of decomposition. The estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

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





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 Inter	est		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)

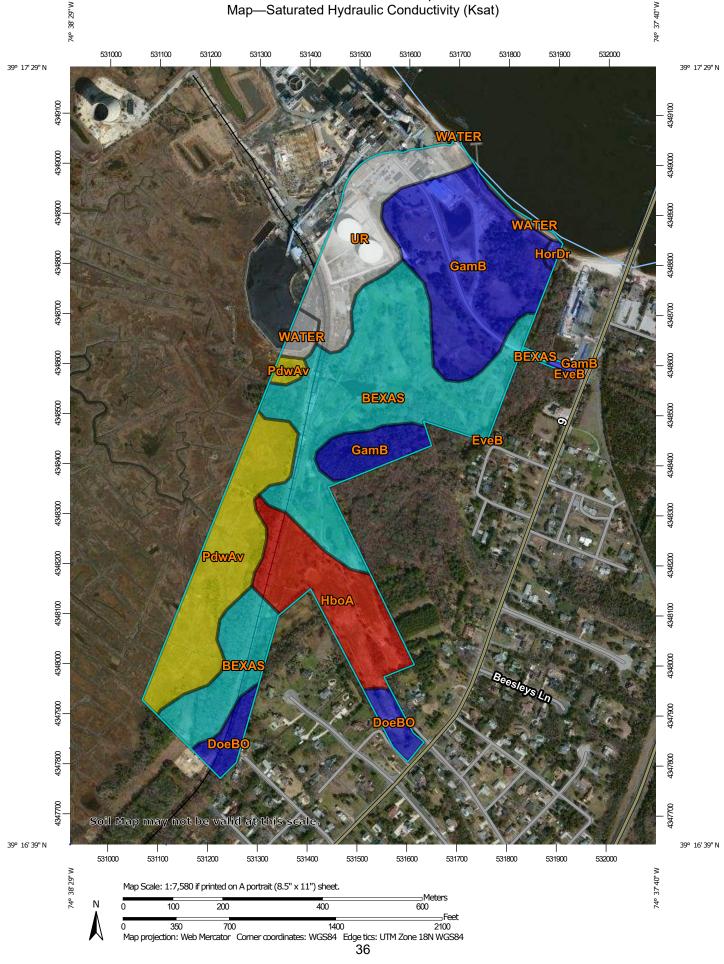
Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates are expressed in terms of micrometers

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.

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



MAP LEGEND			MAP INFORMATION	
Area of In	terest (AOI)	~	US Routes	The soil surveys that comprise your AOI were mapped at
	Area of Interest (AOI)	\approx	Major Roads	1:24,000.
Soils		~	Local Roads	
Soil Rat	ing Polygons			Warning: Soil Map may not be valid at this scale.
	<= 28.2300	Backgrou		Entergoment of more beyond the scale of morning can equip
	> 28.2300 and <= 72.6900		Aerial Photography	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
	> 72.6900 and <= 90.7993			contrasting soils that could have been shown at a more detailed scale.
	> 90.7993 and <= 91.7400			
	Not rated or not available			Please rely on the bar scale on each map sheet for map measurements.
Soil Rat	ing Lines			
~	<= 28.2300			Source of Map: Natural Resources Conservation Service
~	> 28.2300 and <= 72.6900			Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)
~	> 72.6900 and <= 90.7993			Maps from the Web Soil Survey are based on the Web Mercato
~	> 90.7993 and <= 91.7400			projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the
a second	Not rated or not available			Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.
Soil Rat	ing Points			
	<= 28.2300			This product is generated from the USDA-NRCS certified data a of the version date(s) listed below.
	> 28.2300 and <= 72.6900			
	> 72.6900 and <= 90.7993			Soil Survey Area: Cape May County, New Jersey Survey Area Data: Version 15, Sep 16, 2019
	> 90.7993 and <= 91.7400			Soil map units are labeled (as space allows) for map scales
	Not rated or not available			1:50,000 or larger.
Water Fea	tures			Data(a) parial imagan ware shatarrashadi. Mar 05,0044, Ma
\sim	Streams and Canals			Date(s) aerial images were photographed: Mar 25, 2011—Mai 26, 2011
Transport	ation			
+++	Rails			The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background
~	Interstate Highways			imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

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 Inter	est		108.3	100.0%	

Table—Saturated Hydraulic Conductivity (Ksat)

Rating Options—Saturated Hydraulic Conductivity (Ksat)

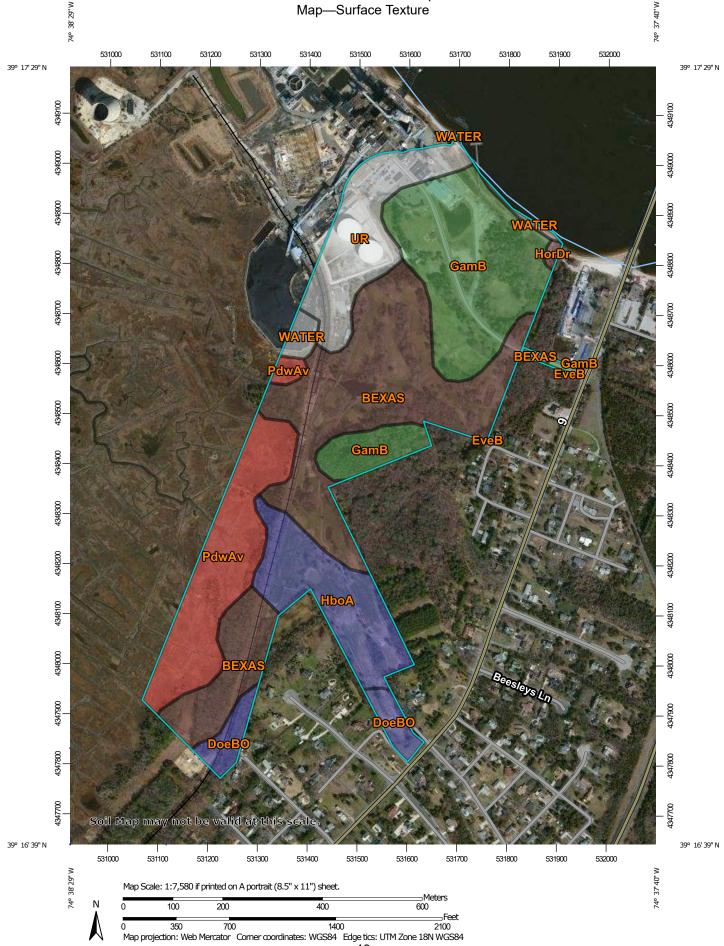
Units of Measure: micrometers per second Aggregation Method: Dominant Component Component Percent Cutoff: None Specified Tie-break Rule: Fastest Interpret Nulls as Zero: No Layer Options (Horizon Aggregation Method): Depth Range (Weighted Average) Top Depth: 0 Bottom Depth: 30 Units of Measure: Centimeters

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."

Custom Soil Resource Report Map—Surface Texture



MAP L	MAP LEGEND		MAP INFORMATION
Area of Interest (AOI)	~	US Routes	The soil surveys that comprise your AOI were mapped at
Area of Interest (AOI)	~	Major Roads	1:24,000.
Soils	~	Local Roads	Warning: Soil Map may not be valid at this scale.
Soil Rating Polygons Loamy sand	Backgrou	Ind	
	Mar.	Aerial Photography	Enlargement of maps beyond the scale of mapping can cause
Mucky peat			misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of
Sand			contrasting soils that could have been shown at a more detailed
Sandy loam			scale.
Not rated or not available			
Soil Rating Lines			Please rely on the bar scale on each map sheet for map measurements.
Loamy sand			measurements.
🛹 Mucky peat			Source of Map: Natural Resources Conservation Service Web Soil Survey URL:
🛹 Sand			Coordinate System: Web Mercator (EPSG:3857)
sandy loam			
Not rated or not available			Maps from the Web Soil Survey are based on the Web Mercato projection, which preserves direction and shape but distorts
Soil Rating Points			distance and area. A projection that preserves area, such as th
Loamy sand			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
Sand			of the version date(s) listed below.
Sandy loam			
Not rated or not available			Soil Survey Area: Cape May County, New Jersey Survey Area Data: Version 15, Sep 16, 2019
Water Features			
Streams and Canals			Soil map units are labeled (as space allows) for map scales
Transportation			1:50,000 or larger.
HI Rails			Date(s) aerial images were photographed: Mar 25, 2011—Ma
nterstate Highways			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

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 Sand percent slopes		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 Inter	est	1	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)

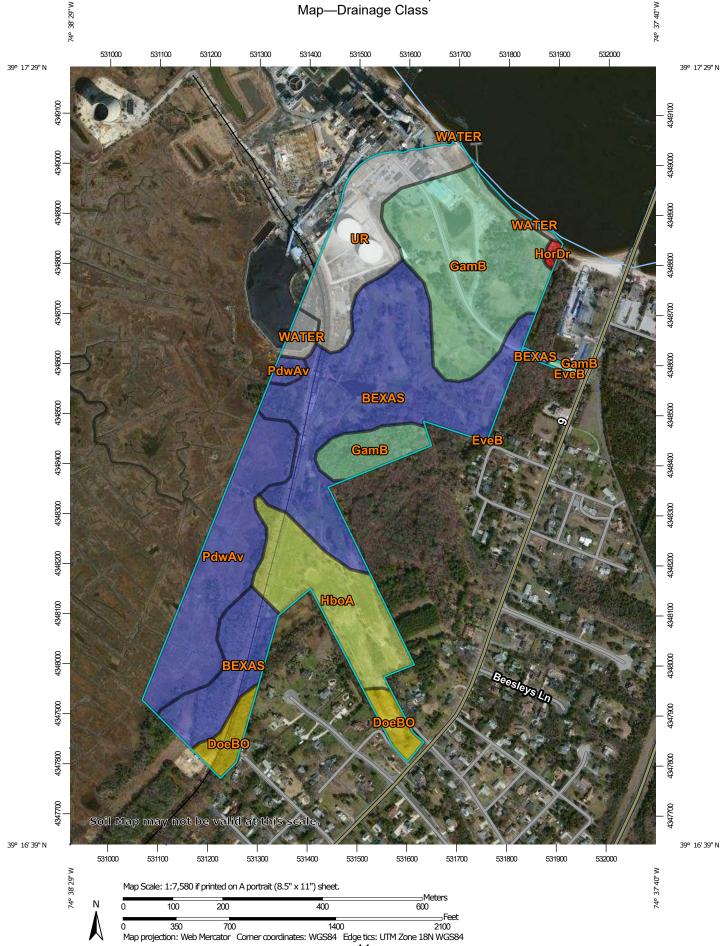
Soil Qualities and Features

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, and very poorly drained. These classes are defined in the "Soil Survey Manual."

Custom Soil Resource Report Map—Drainage Class



	MAP LE	GEND		MAP INFORMATION
Area of Inte	e rest (AOI) Area of Interest (AOI)		Excessively drained Somewhat excessively drained	The soil surveys that comprise your AOI were mapped at 1:24,000.
Soils Soil Patir	ng Polygons		Well drained	Warning: Soil Map may not be valid at this scale.
	Excessively drained		Moderately well drained	
	Somewhat excessively drained		Somewhat poorly drained	Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil
	Well drained		Poorly drained	line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed
	Moderately well drained		Very poorly drained	scale.
	Somewhat poorly drained		Subaqueous	
	Poorly drained		Not rated or not available	Please rely on the bar scale on each map sheet for map measurements.
	Very poorly drained	Water Fea		Course of Many Makural Decourses Concernation Coming
	Subaqueous	\sim	Streams and Canals	Source of Map: Natural Resources Conservation Service Web Soil Survey URL:
	Not rated or not available	Transporta	ation Rails	Coordinate System: Web Mercator (EPSG:3857)
Soil Ratir	•	~	Interstate Highways	Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts
~	Excessively drained Somewhat excessively	~	US Routes	distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more
	drained	\approx	Major Roads	accurate calculations of distance or area are required.
~	Well drained	\approx	Local Roads	This product is constant from the LISDA NECS partified data as
~	Moderately well drained Somewhat poorly drained	Backgrou	nd Aerial Photography	This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.
~			Aenai Photography	Soil Survey Area: Cape May County, New Jersey
~	Poorly drained			Survey Area Data: Version 15, Sep 16, 2019
~	Very poorly drained			
~	Subaqueous			Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.
	Not rated or not available			
Soil Ratir	ng Points			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—Drainage Class

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BEXAS	Berryland and Mullica Very p 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 Inter	est	1	108.3	100.0%

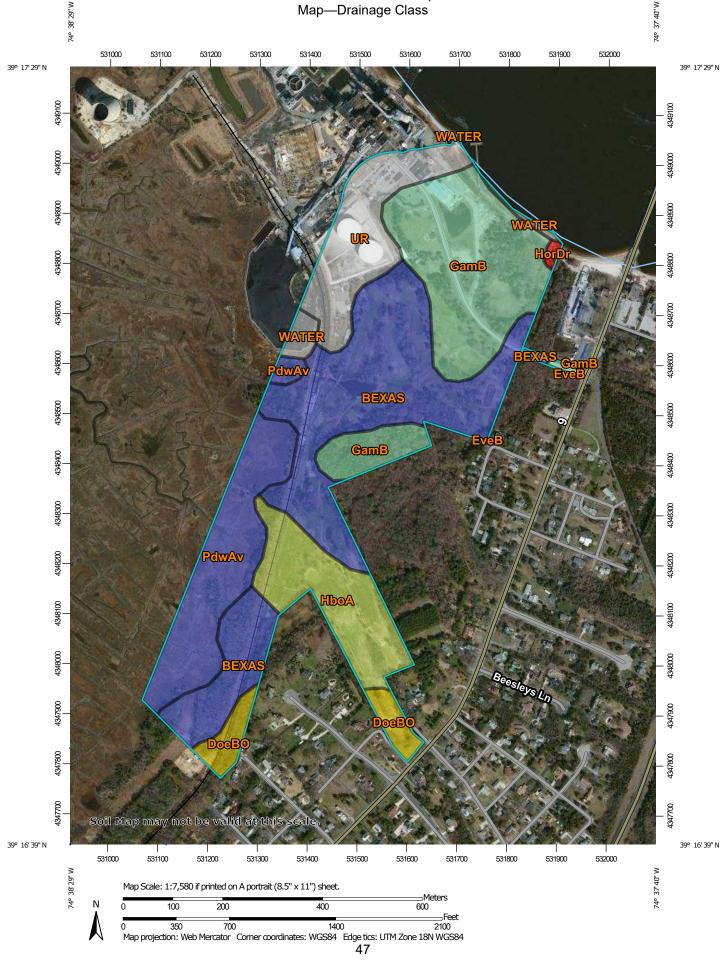
Rating Options—Drainage Class

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, and very poorly drained. These classes are defined in the "Soil Survey Manual."

Custom Soil Resource Report Map—Drainage Class



	MAP LEGEND			MAP INFORMATION
Area of Int	erest (AOI) Area of Interest (AOI)		Excessively drained Somewhat excessively drained	The soil surveys that comprise your AOI were mapped at 1:24,000.
Soils Soil Pati	ng Polygons		Well drained	Warning: Soil Map may not be valid at this scale.
	Excessively drained		Moderately well drained	
	Somewhat excessively		Somewhat poorly drained	Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil
	drained Well drained		Poorly drained	line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed
	Moderately well drained		Very poorly drained	scale.
	Somewhat poorly drained		Subaqueous	Please rely on the bar scale on each map sheet for map
	Poorly drained		Not rated or not available	measurements.
	Very poorly drained	Water Feat		Source of Many Natural Descurses Concernation Service
	Subaqueous	\sim	Streams and Canals	Source of Map: Natural Resources Conservation Service Web Soil Survey URL:
	Not rated or not available	Transporta	ation Rails	Coordinate System: Web Mercator (EPSG:3857)
Soil Rati	ng Lines	~	Interstate Highways	Maps from the Web Soil Survey are based on the Web Mercator
~	Excessively drained	~	US Routes	projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the
~	Somewhat excessively drained	~	Major Roads	Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.
~	Well drained	~	Local Roads	·
~	Moderately well drained	Backgrour	nd	This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.
	Somewhat poorly drained		Aerial Photography	
~	Poorly drained			Soil Survey Area: Cape May County, New Jersey Survey Area Data: Version 15, Sep 16, 2019
~	Very poorly drained			
~	Subaqueous			Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.
	Not rated or not available			
Soil Rati	ng Points			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—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 Inter	est	1	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.

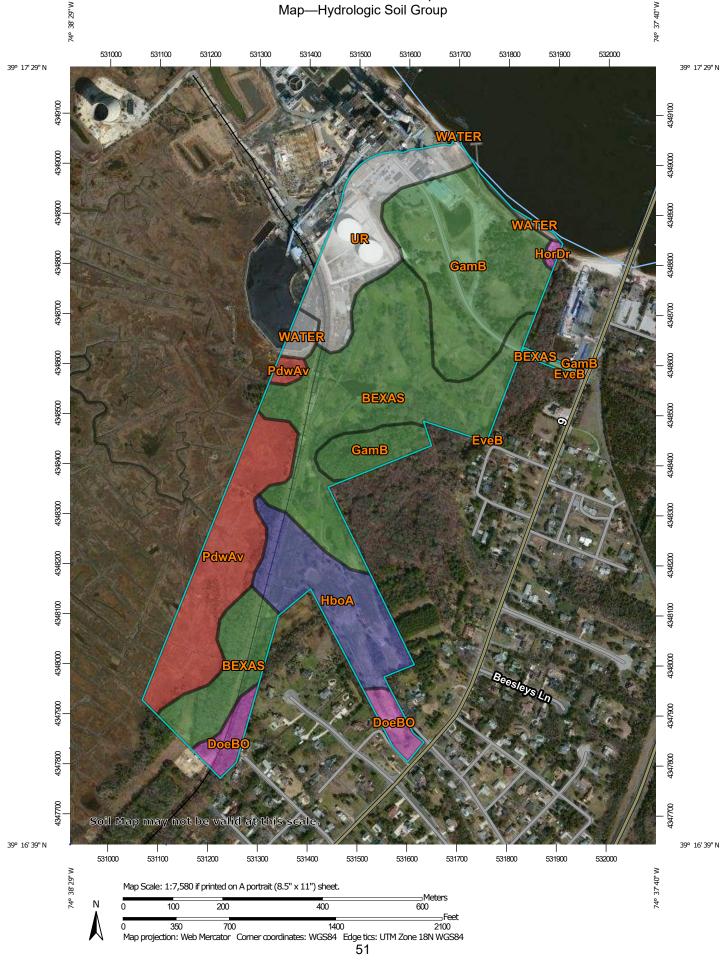
Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

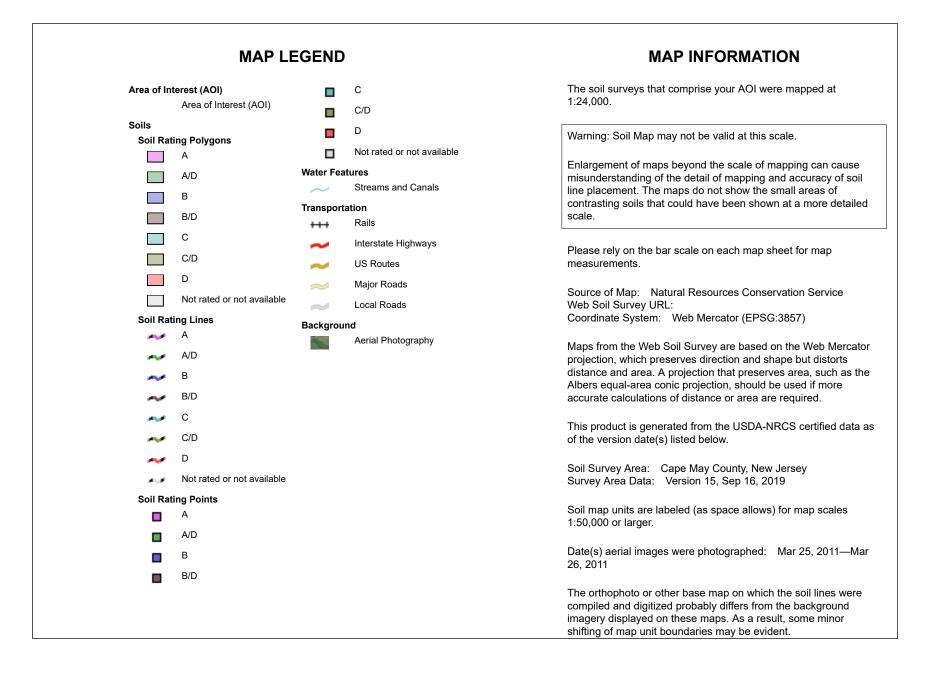
Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

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.

Custom Soil Resource Report Map—Hydrologic Soil Group





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	A	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 Inter	est	1	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.

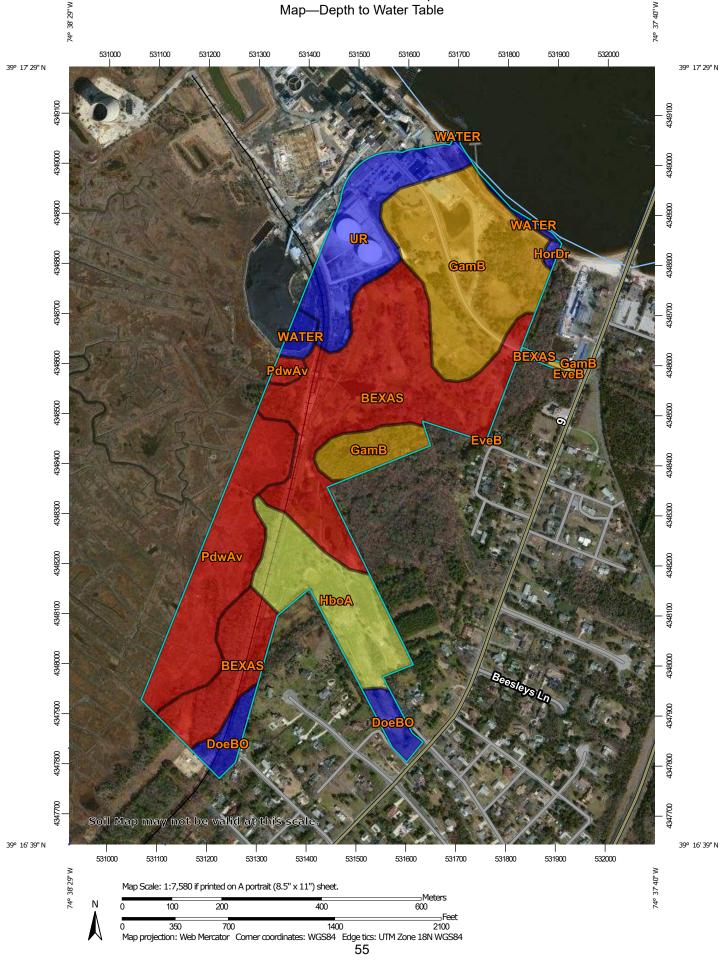
Depth to Water Table

"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.

Custom Soil Resource Report Map—Depth to Water Table



	MAP L	EGEND		MAP INFORMATION	
Area of Int	Area of Interest (AOI) Area of Interest (AOI)		Not rated or not available tures	The soil surveys that comprise your AOI were mapped at 1:24,000.	
Soils		\sim	Streams and Canals		
Soil Rat	ing Polygons 0 - 25	Transport		Warning: Soil Map may not be valid at this scale.	
	25 - 50	+++	Rails Interstate Highways	Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil	
	50 - 100	~	US Routes	line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed	
	100 - 150	~	Major Roads	scale.	
	150 - 200	~	Local Roads	Please rely on the bar scale on each map sheet for map	
	> 200 Not rated or not available	Backgrou	nd Aerial Photography	measurements.	
L Soil Rat	Soil Rating Lines		лена споюдгарну	Source of Map: Natural Resources Conservation Service Web Soil Survey URL:	
	25 - 50			Coordinate System: Web Mercator (EPSG:3857)	
~	50 - 100			Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts	
~~	100 - 150			distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more	
~	150 - 200			accurate calculations of distance or area are required.	
~	> 200			This product is generated from the USDA-NRCS certified data as	
	Not rated or not available			of the version date(s) listed below.	
Soil Rat	ing Points 0 - 25			Soil Survey Area: Cape May County, New Jersey Survey Area Data: Version 15, Sep 16, 2019	
	25 - 50				
	50 - 100			Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.	
	100 - 150			Date(s) aerial images were photographed: Mar 25, 2011—Mar	
	150 - 200			26, 2011	
	> 200			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 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 Inter	est		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.

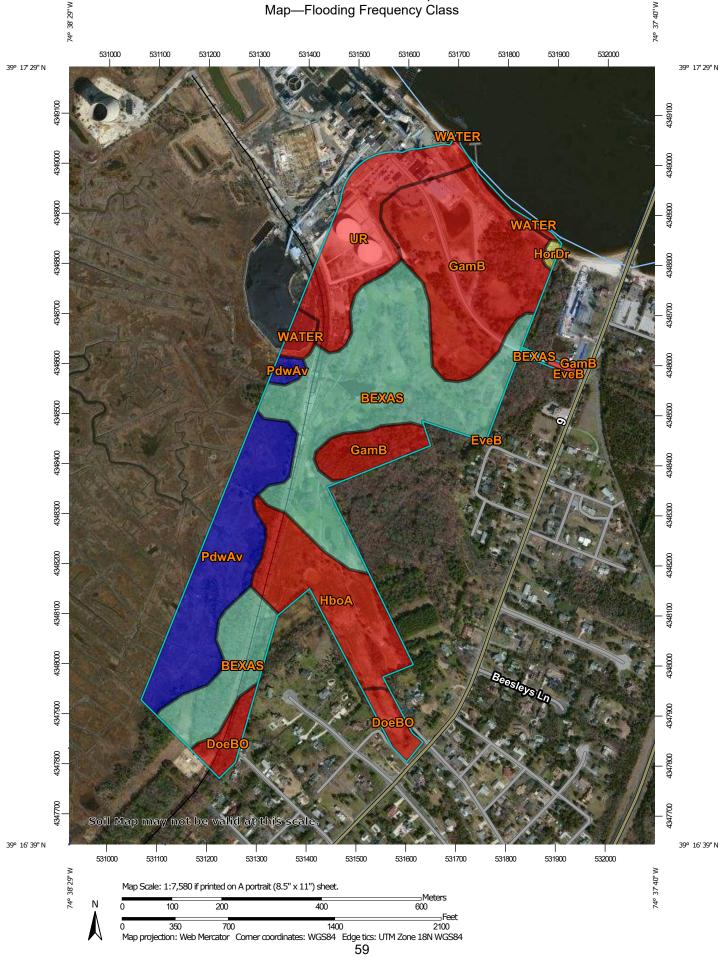
"Rare" means that flooding is unlikely but possible under unusual weather conditions. The chance of flooding is 1 to 5 percent in any year.

"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.

Custom Soil Resource Report Map—Flooding Frequency Class



	MAP LEGEND			MAP INFORMATION	
Soils	terest (AOI) Area of Interest (AOI) ing Polygons	U Water Fea Transport	Streams and Canals	The soil surveys that comprise your AOI were mapped at 1:24,000. Warning: Soil Map may not be valid at this scale.	
	None Very Rare Rare Occasional	*** ** **	Rails Interstate Highways US Routes Major Roads	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.	
Soil Rat	Frequent Very Frequent Not rated or not available ing Lines	Rackgrou	Local Roads Ind Aerial Photography	Please rely on the bar scale on each map sheet for map measurements. Source of Map: Natural Resources Conservation Service Web Soil Survey URL:	
* * * *	None Very Rare Rare Occasional Frequent			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.	
	Very Frequent Not rated or not available ing Points None Very Rare			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	
	Rare Occasional Frequent Very Frequent			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 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 Inter	est	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.

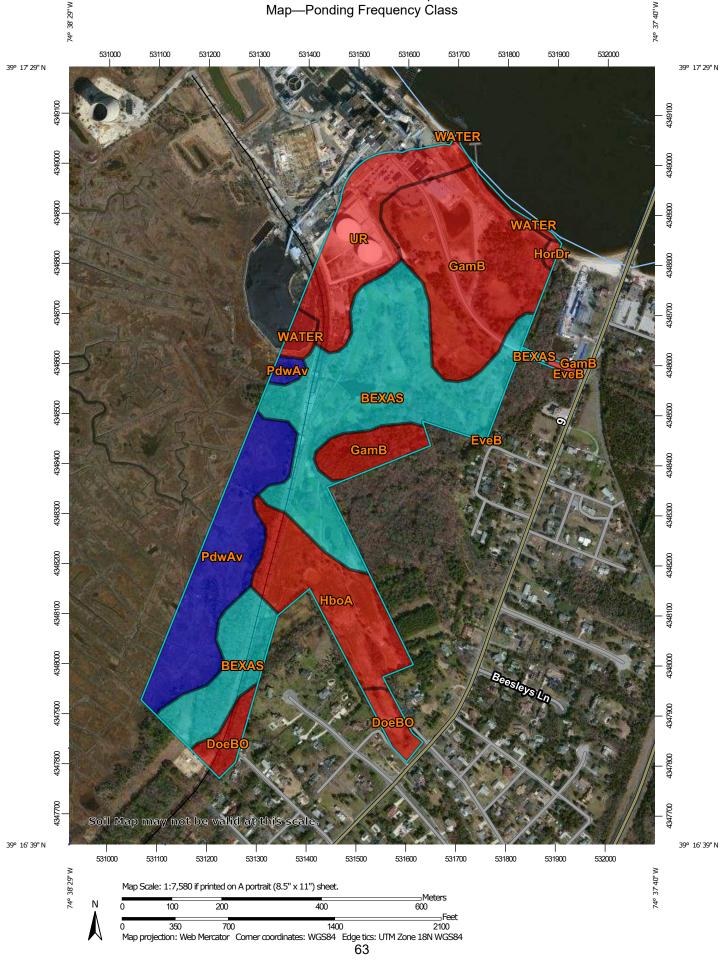
"None" means that ponding is not probable. The chance of ponding is nearly 0 percent in any year.

"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.

Custom Soil Resource Report Map—Ponding Frequency Class



MAP LEGEND				MAP INFORMATION	
Area of Interest (AOI)		JS Routes		The soil surveys that comprise your AOI were mapped at	
	Area of Interest (AOI)	\sim	Major Roads	1:24,000.	
Soils	a Delvaene	~	Local Roads	Warning: Soil Map may not be valid at this scale.	
	ng Polygons None	Backgrou	nd		
	Rare	No.	Aerial Photography	Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil	
	Occasional			line placement. The maps do not show the small areas of	
	Frequent			contrasting soils that could have been shown at a more detailed scale.	
	Not rated or not available				
Soil Ratir	n g Lines None			Please rely on the bar scale on each map sheet for map measurements.	
~	Rare			Source of Map: Natural Resources Conservation Service	
~	Occasional			Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)	
~	Frequent				
	Not rated or not available			Maps from the Web Soil Survey are based on the Web Mercato	
Soil Ratir				projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as th	
	None			Albers equal-area conic projection, should be used if more	
_	Rare			accurate calculations of distance or area are required.	
	Occasional			This product is generated from the USDA-NRCS certified data of the version date(s) listed below.	
	Frequent				
	Not rated or not available			Soil Survey Area: Cape May County, New Jersey Survey Area Data: Version 15, Sep 16, 2019	
Water Feat	ures			Survey Area Data. Version 13, Sep 10, 2019	
\sim	Streams and Canals			Soil map units are labeled (as space allows) for map scales	
Transporta	tion			1:50,000 or larger.	
++++	Rails			Date(s) aerial images were photographed: Mar 25, 2011—Ma	
~	Interstate Highways			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 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	vAv Pawcatuck-Transquaking complex, 0 to 1 percent slopes, very frequently flooded		15.9	14.7%
UR	Urban land	None	12.4	11.4%
WATER	Water	None	1.7	1.5%
Totals for Area of Inter	est	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

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

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.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/ nrcs/detail/national/soils/?cid=nrcs142p2_054262

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. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ home/?cid=nrcs142p2 053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/ detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/ nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/? cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf



United States Department of Agriculture



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.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Preface	2
How Soil Surveys Are Made	5
Soil Map	8
Soil Map	9
Legend	10
Map Unit Legend	11
Map Unit Descriptions	11
Cape May County, New Jersey	13
AptAv—Appoquinimink-Transquaking-Mispillion complex, 0 to 1	
percent slopes, very frequently flooded	13
PdwAv—Pawcatuck-Transquaking complex, 0 to 1 percent slopes,	
very frequently flooded	15
UR—Urban land	17
USPSAS—Urban land-Psamments, sulfidic substratum complex, 0 to	
2 percent slopes, occasionally flooded	18
WATER—Water	
Soil Information for All Uses	21
Suitabilities and Limitations for Use	21
Land Classifications	21
Hydric Rating by Map Unit	21
Soil Properties and Qualities	26
Soil Physical Properties	26
Organic Matter	
Saturated Hydraulic Conductivity (Ksat)	29
Surface Texture	
Soil Qualities and Features	
Depth to Any Soil Restrictive Layer	
Drainage Class	40
Hydrologic Soil Group	43
Water Features	47
Depth to Water Table	
Flooding Frequency Class	
Ponding Frequency Class	
References	59

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 L	EGEND)	MAP INFORMATION	
Area of Int	terest (AOI) Area of Interest (AOI)	8	Spoil Area Stony Spot	The soil surveys that comprise your AOI were mapped at 1:24,000.	
Soils	Soil Map Unit Polygons Soil Map Unit Lines Soil Map Unit Points	©© ☆	Very Stony Spot Wet Spot Other	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	
Special (0)	Special Point Features		Special Line Features Water Features Streams and Canals	contrasting soils that could have been shown at a more detailed scale.	
*	Clay Spot Closed Depression Gravel Pit	Transport	Rails Interstate Highways	Please rely on the bar scale on each map sheet for map measurements. Source of Map: Natural Resources Conservation Service	
÷ ©	Gravelly Spot Candfill Cava Flow Cava Flow Cava Flow	* *	US Routes Major Roads Local Roads	Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857) Maps from the Web Soil Survey are based on the Web Mercator	
		Background Aerial Photography		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.	
0 0 ~	Miscellaneous Water Perennial Water Rock Outcrop			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	
+	Saline Spot Sandy Spot			Survey Area Data: Version 15, Sep 16, 2019 Soil map units are labeled (as space allows) for map scales	
⊕ ♦ ♦	Severely Eroded Spot Sinkhole Slide or Slip			1:50,000 or larger. Date(s) aerial images were photographed: Mar 25, 2011—Mar 26, 2011	
ø	Sodic Spot			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 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%
SPSAS 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 Legend

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 *Cg - 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

Custom Soil Resource Report

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.

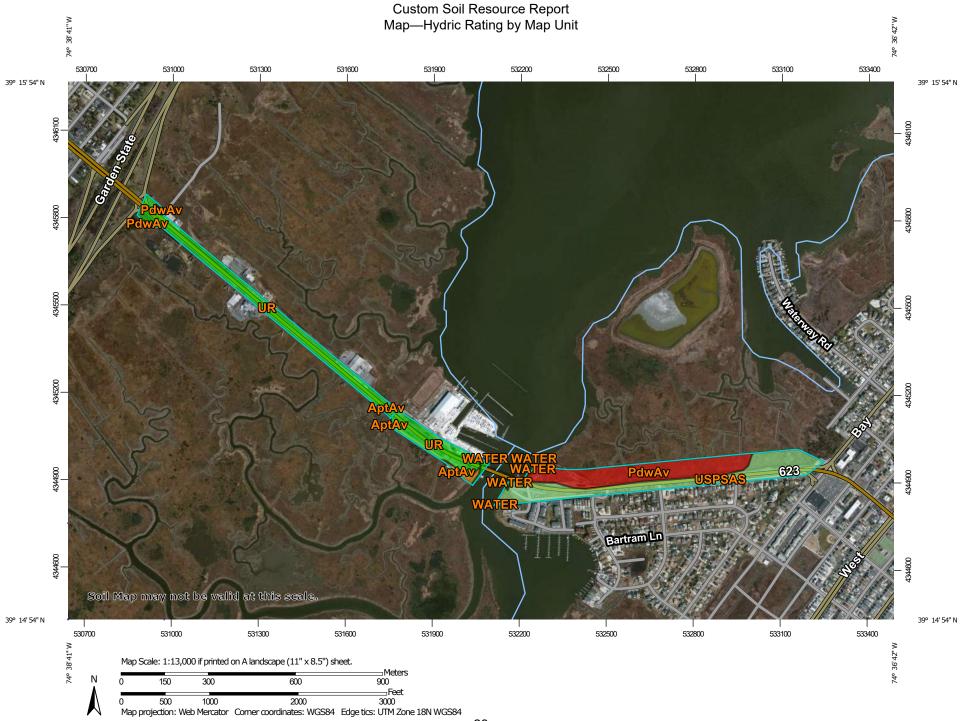
Federal Register. September 18, 2002. Hydric soils of the United States.

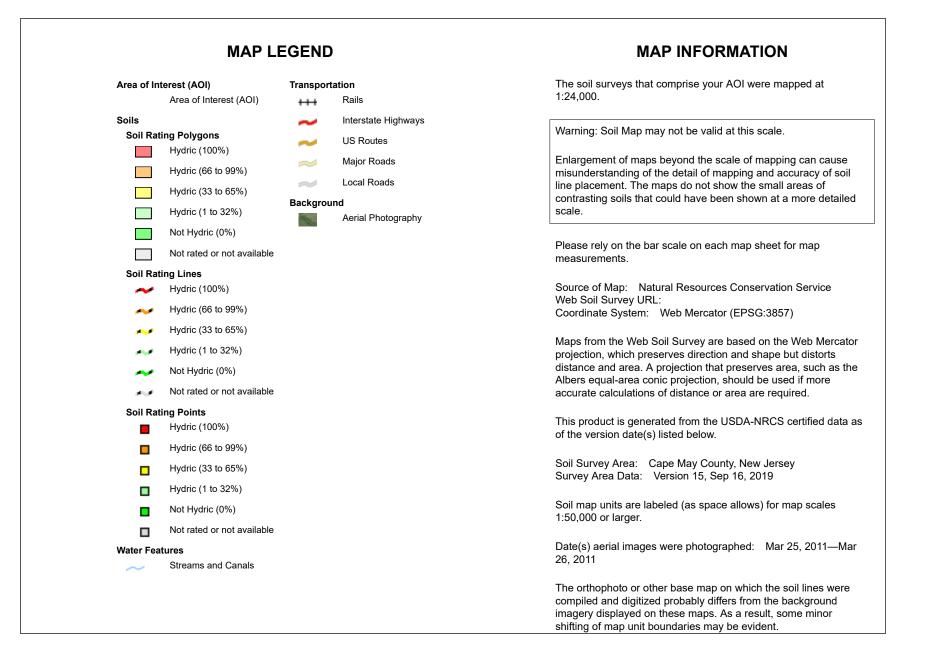
Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

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 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 Intere	est	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

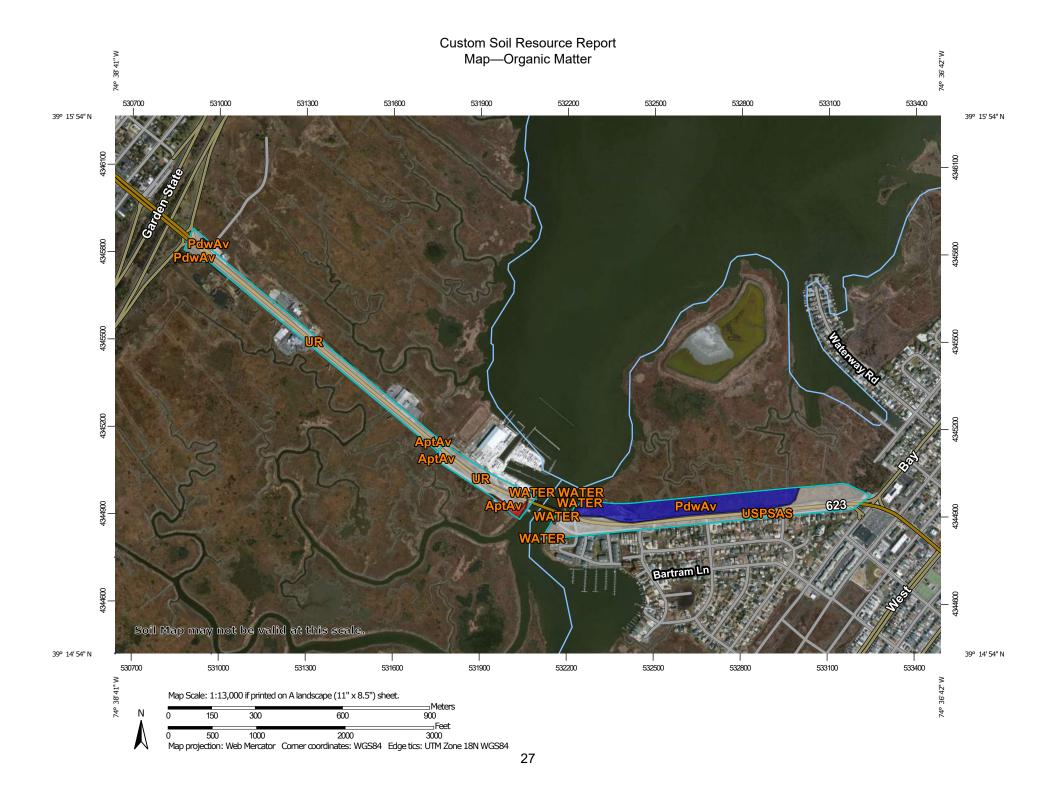
Soil Physical Properties are measured or inferred from direct observations in the field or laboratory. Examples of soil physical properties include percent clay, organic matter, saturated hydraulic conductivity, available water capacity, and bulk density.

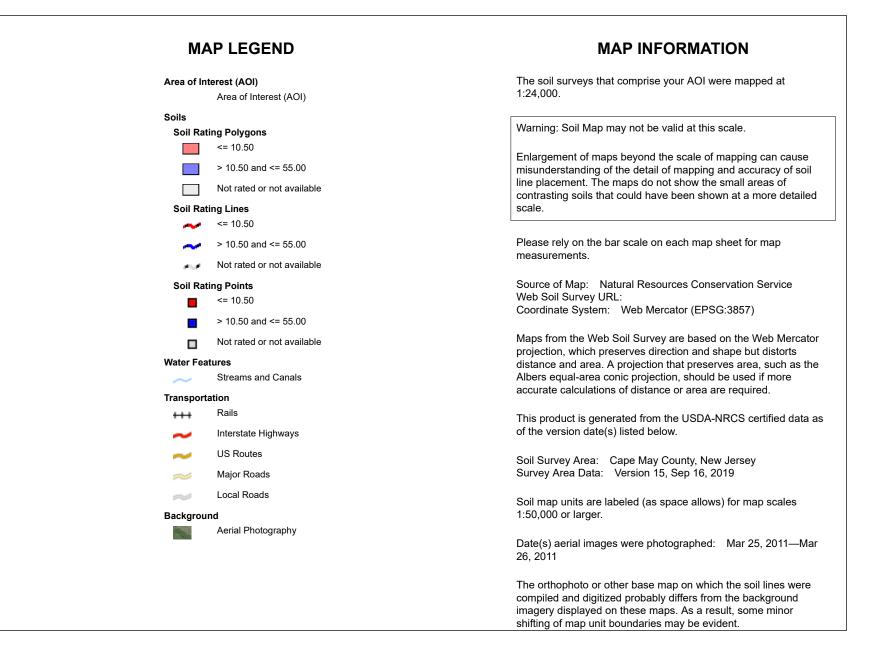
Organic Matter

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.





Table—Organic Matter

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	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 Inter	est		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

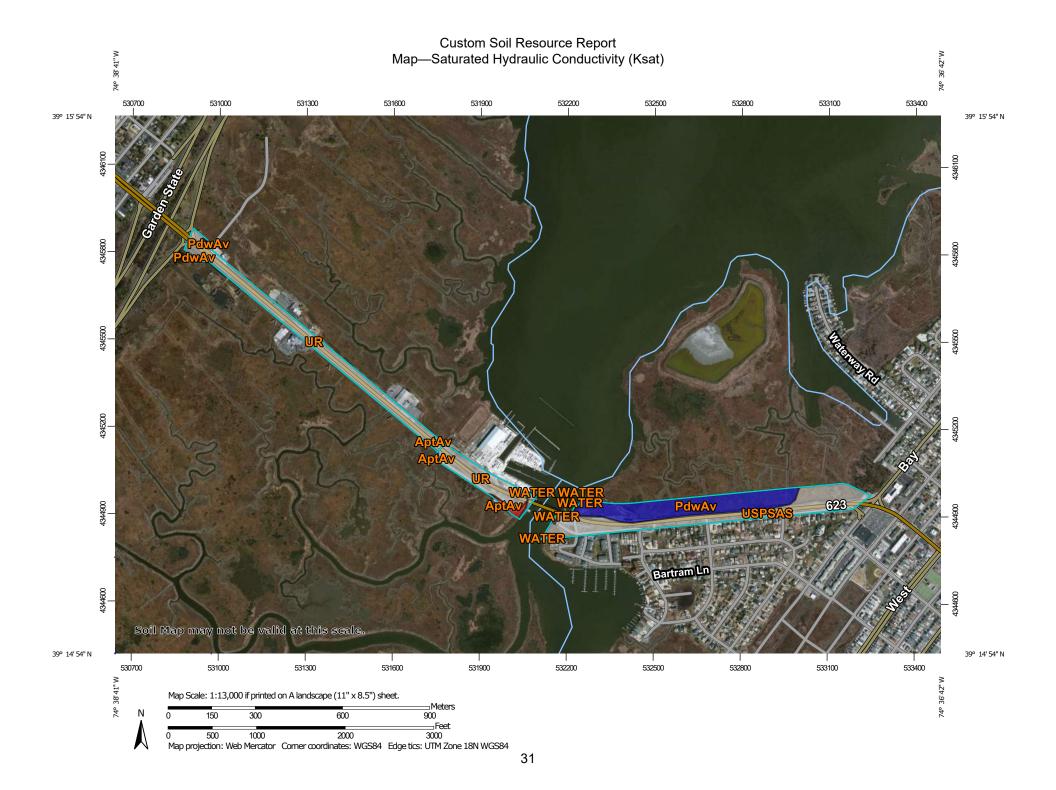
Saturated Hydraulic Conductivity (Ksat)

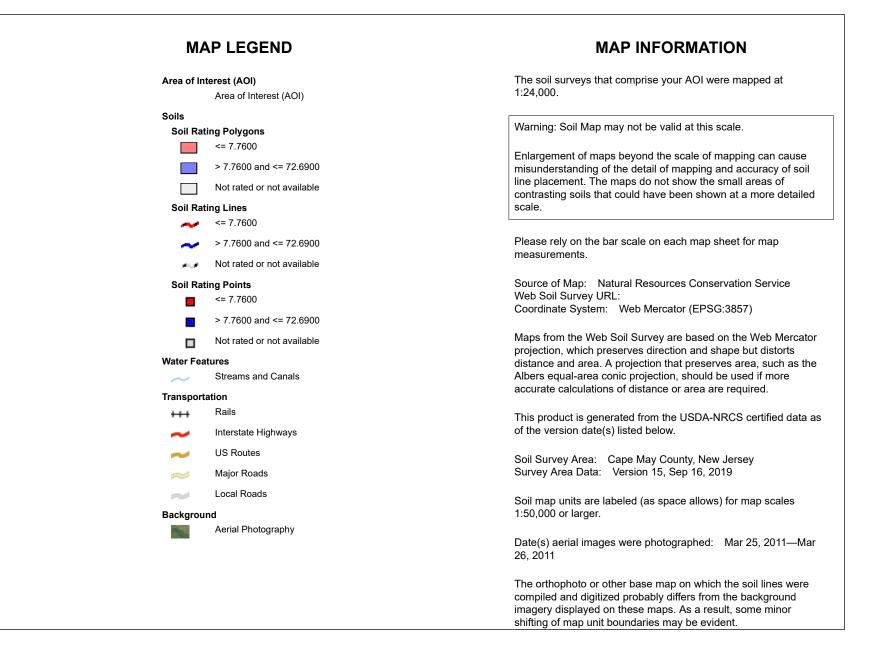
Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic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





Map unit symbol	Map unit name	Rating (micrometers	Acres in AOI	Percent of AOI
		per second)		
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 Inter	est		42.9	100.0%

Table—Saturated Hydraulic Conductivity (Ksat)

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."



MAP LEGEND	MAP INFORMATION
Area of Interest (AOI) Area of Interest (AOI)	The soil surveys that comprise your AOI were mapped at 1:24,000.
Soils Soil Rating Polygons Mucky peat Not rated or not available Soil Rating Lines Mucky peat	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.
Not rated or not available Soil Rating Points Mucky peat	Please rely on the bar scale on each map sheet for map measurements.
Not rated or not available Water Features Streams and Canals	Source of Map: Natural Resources Conservation Service Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)
Transportation	Maps from the Web Soil Survey are based on the Web Mercator
HI Rails Interstate Highways US Routes	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.
Major Roads	This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.
Background Aerial Photography	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—Surface	Texture
---------------	---------

Map unit symbol	Map unit name	nit name Rating Acres in AOI Per		
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 Inter	est	1	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.



	MAP L	EGEND		MAP INFORMATION
Area of In	terest (AOI) Area of Interest (AOI)	Water Fea	Not rated or not available tures	The soil surveys that comprise your AOI were mapped at 1:24,000.
Soil Rati	Area of Interest (AOI) ting Polygons 0 - 25 25 - 50 50 - 100 100 - 150 150 - 200 > 200 Not rated or not available ting Lines 0 - 25 25 - 50 50 - 100 100 - 150 150 - 200 > 200 Not rated or not available ting Points 0 - 25	Water Fea	Streams and Canals ation Rails Interstate Highways US Routes Major Roads Local Roads	 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
	25 - 50 50 - 100 100 - 150 150 - 200 > 200			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 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	SPSAS Urban land-Psamments, sulfidic substratum complex, 0 to 2 percent slopes, occasionally flooded		13.6	31.8%
WATER	Water	>200	0.5	1.1%
Totals for Area of Inter	est		42.9	100.0%

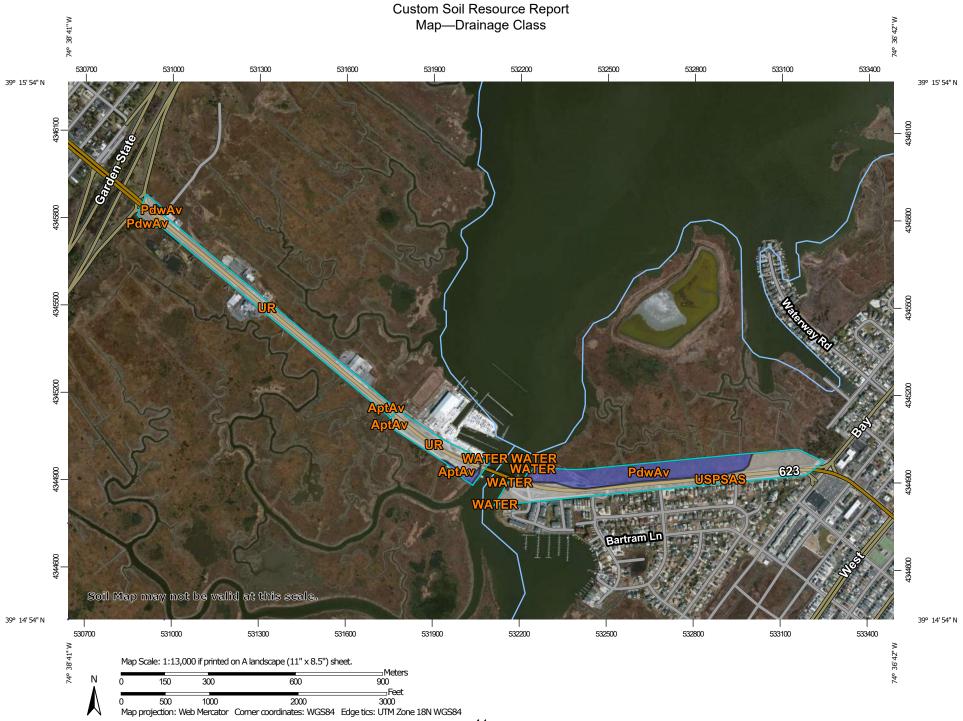
Table—Depth to Any Soil Restrictive Layer

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, and very poorly drained. These classes are defined in the "Soil Survey Manual."



	MAP LE	GEND		MAP INFORMATION
Area of Int	erest (AOI) Area of Interest (AOI)		Excessively drained Somewhat excessively drained	The soil surveys that comprise your AOI were mapped at 1:24,000.
Soils Soil Pati	ng Polygons		Well drained	Warning: Soil Map may not be valid at this scale.
	Excessively drained		Moderately well drained	
	Somewhat excessively		Somewhat poorly drained	Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil
	drained Well drained		Poorly drained	line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed
	Moderately well drained		Very poorly drained	scale.
	Somewhat poorly drained		Subaqueous	Please rely on the bar scale on each map sheet for map
	Poorly drained		Not rated or not available	measurements.
	Very poorly drained	Water Feat		Source of Many Natural Descurses Concernation Service
	Subaqueous	\sim	Streams and Canals	Source of Map: Natural Resources Conservation Service Web Soil Survey URL:
	Not rated or not available	Transporta	ation Rails	Coordinate System: Web Mercator (EPSG:3857)
Soil Rati	ng Lines	~	Interstate Highways	Maps from the Web Soil Survey are based on the Web Mercator
~	Excessively drained	~	US Routes	projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the
~	Somewhat excessively drained	~	Major Roads	Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.
~	Well drained	~	Local Roads	·
~	Moderately well drained	Backgrour	nd	This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.
	Somewhat poorly drained		Aerial Photography	
~	Poorly drained			Soil Survey Area: Cape May County, New Jersey Survey Area Data: Version 15, Sep 16, 2019
~	Very poorly drained			
~	Subaqueous			Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.
	Not rated or not available			
Soil Rati	ng Points			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—Drainage Class

Map unit symbol	o unit symbol Map unit name Ra		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	SPSAS Urban land-Psamments, sulfidic substratum complex, 0 to 2 percent slopes, occasionally flooded			31.8%	
WATER	Water		0.5	1.1%	
Totals for Area of Inter	est	1	42.9	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.

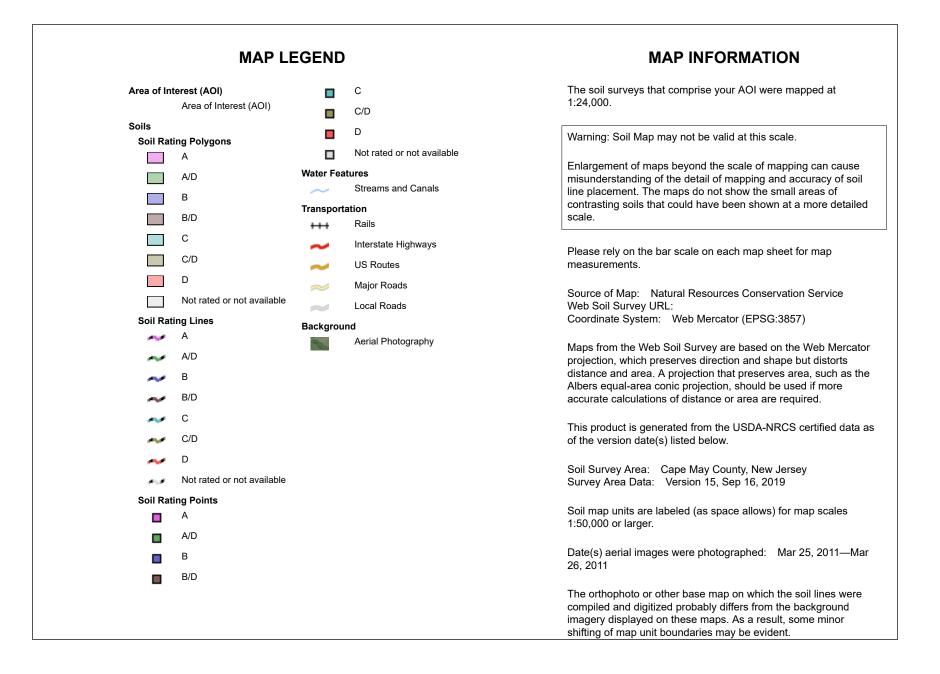
Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

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.





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	SPSAS 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 Inter	est		42.9	100.0%

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition Component Percent Cutoff: None Specified Tie-break Rule: Higher

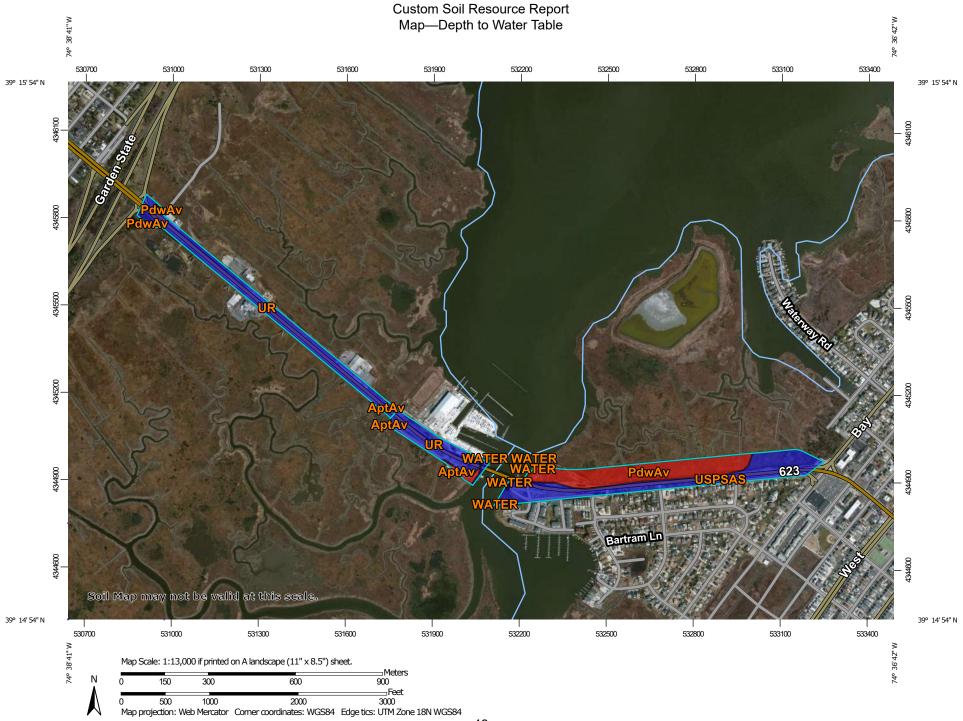
Water Features

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.



	MAP L	EGEND		MAP INFORMATION
Area of Int	erest (AOI) Area of Interest (AOI)	Water Fea	Not rated or not available tures	The soil surveys that comprise your AOI were mapped at 1:24,000.
Soils		\sim	Streams and Canals	
Soil Rati	ng Polygons	Transport	ation	Warning: Soil Map may not be valid at this scale.
	0 - 25	+++	Rails	Enlargement of maps beyond the scale of mapping can cause
	25 - 50	~	Interstate Highways	misunderstanding of the detail of mapping and accuracy of soil
	50 - 100	~	US Routes	line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed
	100 - 150	\approx	Major Roads	scale.
	150 - 200	~	Local Roads	
	> 200	Backgrou		Please rely on the bar scale on each map sheet for map measurements.
	Not rated or not available	No.	Aerial Photography	
Soil Rati	ng Lines			Source of Map: Natural Resources Conservation Service Web Soil Survey URL:
~	0 - 25			Coordinate System: Web Mercator (EPSG:3857)
~	25 - 50			
	50 - 100			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
~	100 - 150			Albers equal-area conic projection, should be used if more
~	150 - 200			accurate calculations of distance or area are required.
~	> 200			This product is generated from the USDA-NRCS certified data as
1.1	Not rated or not available			of the version date(s) listed below.
Soil Rati	ng Points			
	0 - 25			Soil Survey Area: Cape May County, New Jersey Survey Area Data: Version 15, Sep 16, 2019
	25 - 50			
	50 - 100			Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.
	100 - 150			
	150 - 200			Date(s) aerial images were photographed: Mar 25, 2011—Mar
	> 200			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—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 Inter	est	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.

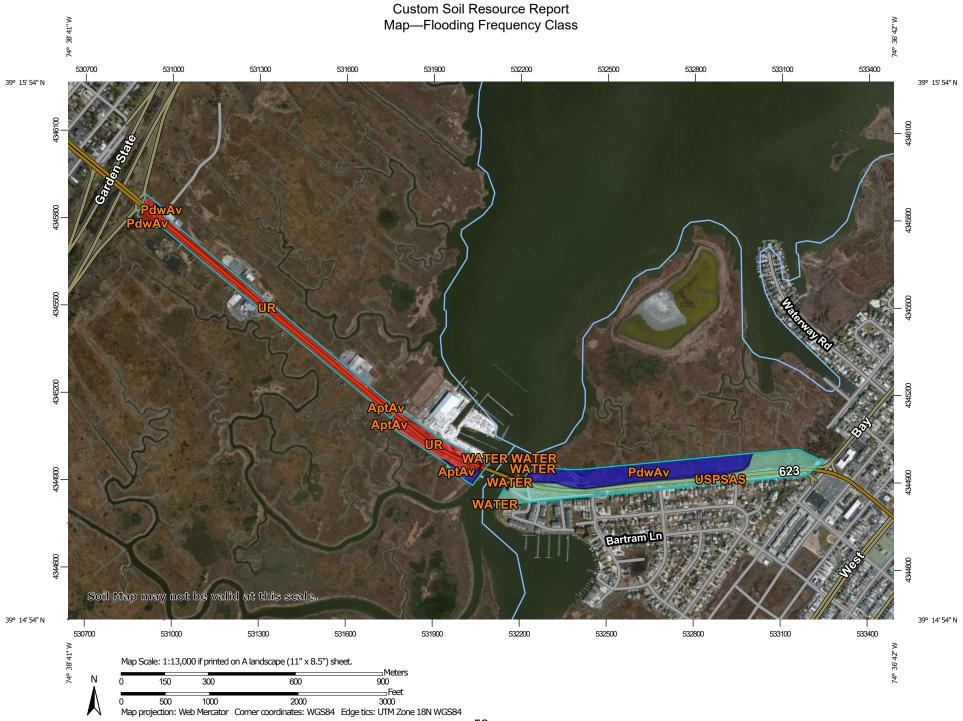
"Very rare" means that flooding is very unlikely but possible under extremely unusual weather conditions. The chance of flooding is less than 1 percent in any year.

"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.



	MAP LEGEND			MAP INFORMATION	
Soils	terest (AOI) Area of Interest (AOI)	□ Water Fea	Not rated or not available atures Streams and Canals	The soil surveys that comprise your AOI were mapped at 1:24,000. Warning: Soil Map may not be valid at this scale.	
	ing Polygons None Very Rare Rare Occasional	Transport	ation Rails Interstate Highways US Routes Major Roads	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.	
	Frequent Very Frequent Not rated or not available	Backgrou	Local Roads	Please rely on the bar scale on each map sheet for map measurements. Source of Map: Natural Resources Conservation Service	
Soil Rat	ing Lines None Very Rare Rare Occasional Frequent			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.	
Soil Rat	Very Frequent Not rated or not available ing Points None			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	
	Very Rare Rare Occasional Frequent			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	
•	Very Frequent			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 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

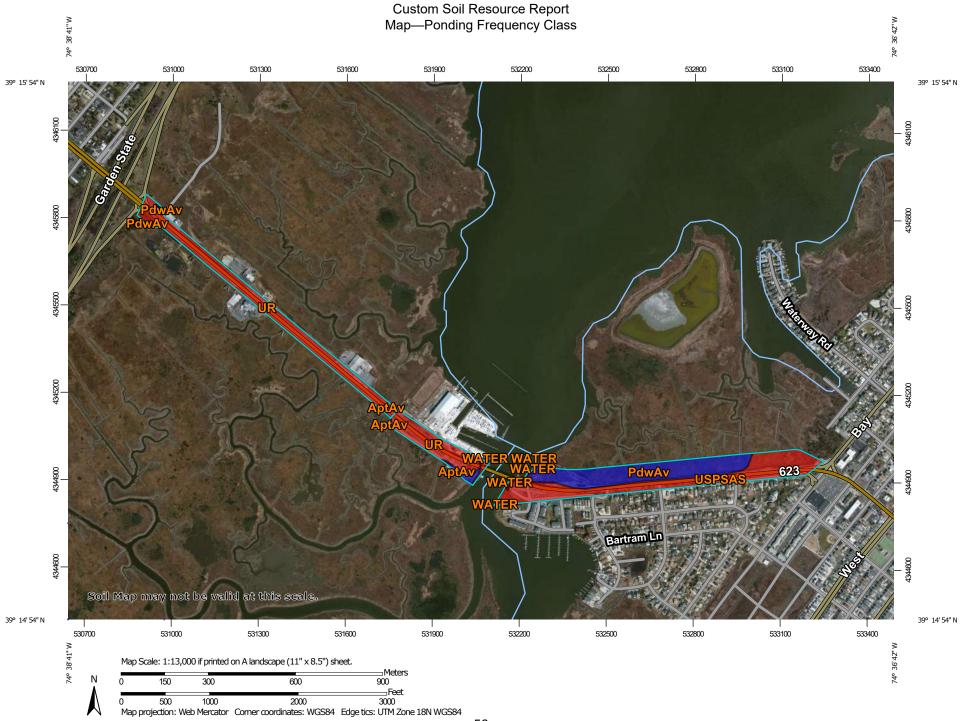
Ponding Frequency Class

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.



	MAP LEGEND			MAP INFORMATION		
Area of Interest (AOI) – US Routes		US Routes	The soil surveys that comprise your AOI were mapped at			
	Area of Interest (AOI)	\sim	Major Roads	1:24,000.		
Soils Soil Ratir	ng Polygons	~	Local Roads	Warning: Soil Map may not be valid at this scale.		
	None	Backgrou	nd			
	Rare	No.	Aerial Photography	Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil		
	Occasional			line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed		
	Frequent			scale.		
	Not rated or not available					
Soil Ratir	n g Lines None			Please rely on the bar scale on each map sheet for map measurements.		
~	Rare			Source of Map: Natural Resources Conservation Service		
~	Occasional			Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)		
~	Frequent					
	Not rated or not available			Maps from the Web Soil Survey are based on the Web Mercato projection, which preserves direction and shape but distorts		
Soil Ratir	na Points			distance and area. A projection that preserves area, such as th		
	None			Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.		
	Rare					
	Occasional			This product is generated from the USDA-NRCS certified data of the version date(s) listed below.		
	Frequent			ζ,		
	Not rated or not available			Soil Survey Area: Cape May County, New Jersey Survey Area Data: Version 15, Sep 16, 2019		
Water Feat	ures					
\sim	Streams and Canals			Soil map units are labeled (as space allows) for map scales		
Transporta	tion			1:50,000 or larger.		
+++	Rails			Date(s) aerial images were photographed: Mar 25, 2011—Ma		
~	Interstate Highways			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—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 Inter	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

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

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.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/ nrcs/detail/national/soils/?cid=nrcs142p2_054262

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. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ home/?cid=nrcs142p2 053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/ detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/ nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/? cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf



Attachment B. Site Photographs

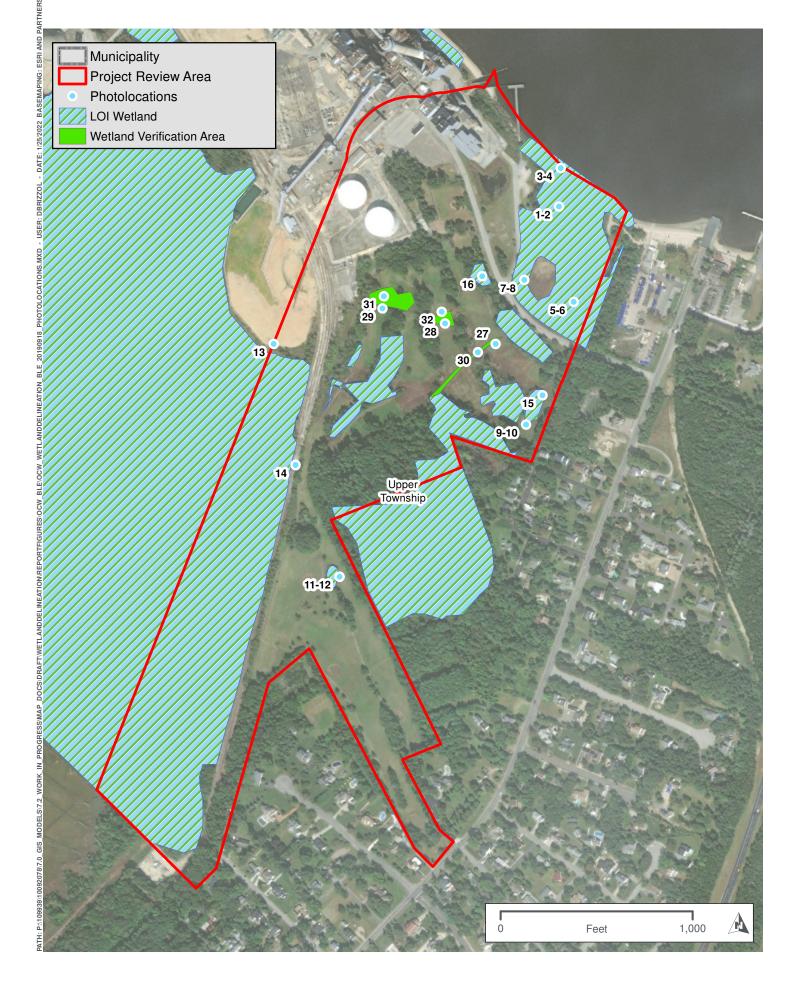






Photo 1: Photo of upland soil profile collected outside Wetland A.

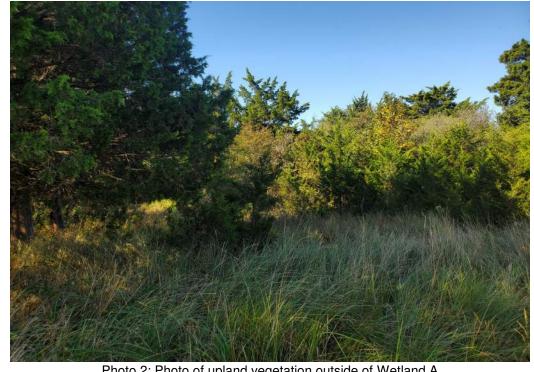


Photo 2: Photo of upland vegetation outside of Wetland A.

		DATE:	11/11/19	PHOTO
Orsted Ocean Wind Project	Wetland Delineation - BL England	CREATED BY:	JC	
Orsted Ocean Wind Project	Photography	REVIEWED BY:	DB	1 and 2
	517	JOB NO:	10092078	

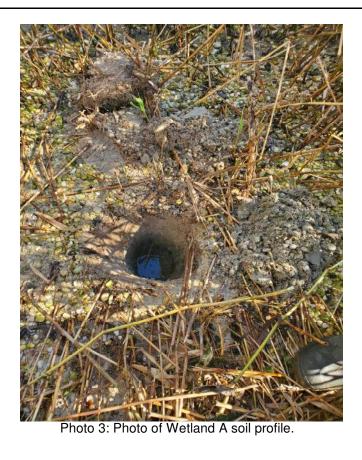




Photo 4: Photo of Wetland A *Phragmites australis* stands.

		DATE:	11/11/19	РНОТО
Orsted Ocean Wind Project	Wetland Delineation - BL England	CREATED BY:	JC	
Orsted Ocean Wind Project	Photography	REVIEWED BY:	DB	3 and 4
	5 1 7	JOB NO:	10092078	



Photo 5: Photo of Wetland A observation 3 soil pit location.



Photo 6: Tree morphological adaptations within Wetland A.

Orsted Ocean Wind Project		DATE:	11/11/19	PHOTO
	Wetland Delineation - BL England	CREATED BY:	JC	
	Photography	REVIEWED BY:	DB	5 and 6
	5	JOB NO:	10092078	



Photo 7: Photo of Wetland B location.



Photo 8: Photo of Wetland B soil profile.

		DATE:	11/11/19	РНОТО
Orsted Ocean Wind Project	Wetland Delineation - BL England	CREATED BY:	JC	
	Thotography	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.

					1
Orsted Ocean Wind Project		DATE:	11/11/19	PHOTO	
	Wetland Delineation - BL England	CREATED BY:	JC		l
	Photography	REVIEWED BY:	DB	9 and 10	
	5 1 7	JOB NO:	10092078		



Photo 11: Photo of Wetland D soil pit location.



Photo 12: Photo of Wetland D.

		DATE:	11/11/19	рното
Orsted Ocean Wind Project	ect State	CREATED BY:	JC	11 and 12
Orsted Ocean wind Project		REVIEWED BY:	ZL	
	0,1,7	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.

		DATE:	11/11/19	РНОТО
Orsted Ocean Wind Project	Wetland Delineation - BL England	CREATED BY:	JC	
	Photography	REVIEWED BY:	ZL	13 and 14
	517	JOB NO:	10092078	



Photo 15: Photo of Wetland C.



Photo 16: Wetland confirmation location on west side of LOI verification area.

	Wetland Delineation - BL England	DATE:	11/11/19	РНОТО
Orsted Ocean Wind Project		CREATED BY:	JC	15 and 16
Orsted Ocean Wind Project		REVIEWED BY:	DB	
	51,	JOB NO:	10092078	



Photo 17: Photo of Spartina alterniflora along Roosevelt Boulevard



Photo 18: Photo along roadside of Roosevelt Boulevard

		DATE:	11/11/19	РНОТО
Orsted Ocean Wind Project	Wetland Delineation - Roosevelt Boulevard	CREATED BY:	JC	
	Photography	REVIEWED BY:	DB	17 and 18
	0 1 7	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	РНОТО
Orsted Ocean Wind Project	Wetland Delineation - Roosevelt Boulevard	CREATED BY:	JC	
Photography	Photography	REVIEWED BY:	DB	19 and 20
		JOB NO:	10092078	





Photo 22: Photo of WL-B-WET wetland soil profile.

		DATE:	11/11/19	РНОТО
Orsted Ocean Wind Project	Wetland Delineation - Roosevelt Boulevard	CREATED BY:	JC	
	Photography	REVIEWED BY:	DB	21 and 22
	5 1 5	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
Orsted Ocean Wind Project	Wetland Delineation - Roosevelt Boulevard	CREATED BY:	JC	
Unsted Ocean Wind Project	Photography	REVIEWED BY:	DB	23 and 24
	5 1 <i>7</i>	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.

Orsted Ocean Wind Project		DATE:	11/11/19	PHOTO
	Wetland Delineation - Roosevelt Boulevard	CREATED BY:	JC	
	Photography	REVIEWED BY:	DB	25 and 26
		JOB NO:	10092078	



Attachment C. Letter of Interpretation (LOI) Letter and Plan



State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

PHILIP D. MURPHY Governor

SHEILA Y. OLIVER Lt. Governor Division of Land Use Regulation Mail Code 501-02A P.O. Box 420 Trenton, New Jersey 08625-0420 www.nj.gov/dep/landuse

MAR 1 9 2019

CATHERINE R. McCABE Commissioner

Pete Murray c/o RC Cape May Holding LLC 900 N. Shore Road Beesley's Point, NJ 08223

> 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 <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].

<u>Sheet 7 of 17</u>:

- Intermediate: Line segments 453 through 460 [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 8 of 17:

- Intermediate: 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].

<u>Sheet 9 of 17</u>:

• **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].

<u>Sheet 10 of 17</u>:

- 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].
- 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].

<u>Sheet 11 of 17</u>:

• **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]
- <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 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 <u>http://www.nj.gov/landuse</u> 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 <u>www.state.nj.us/dep/landuse/forms</u>. Hearing requests received after 30 days of publication notice may be denied. The DEP Bulletin is available on the Department's website at <u>www.state.nj.us/dep/bulletin</u>. 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 <u>www.nj.gov/dep/odrn</u> 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

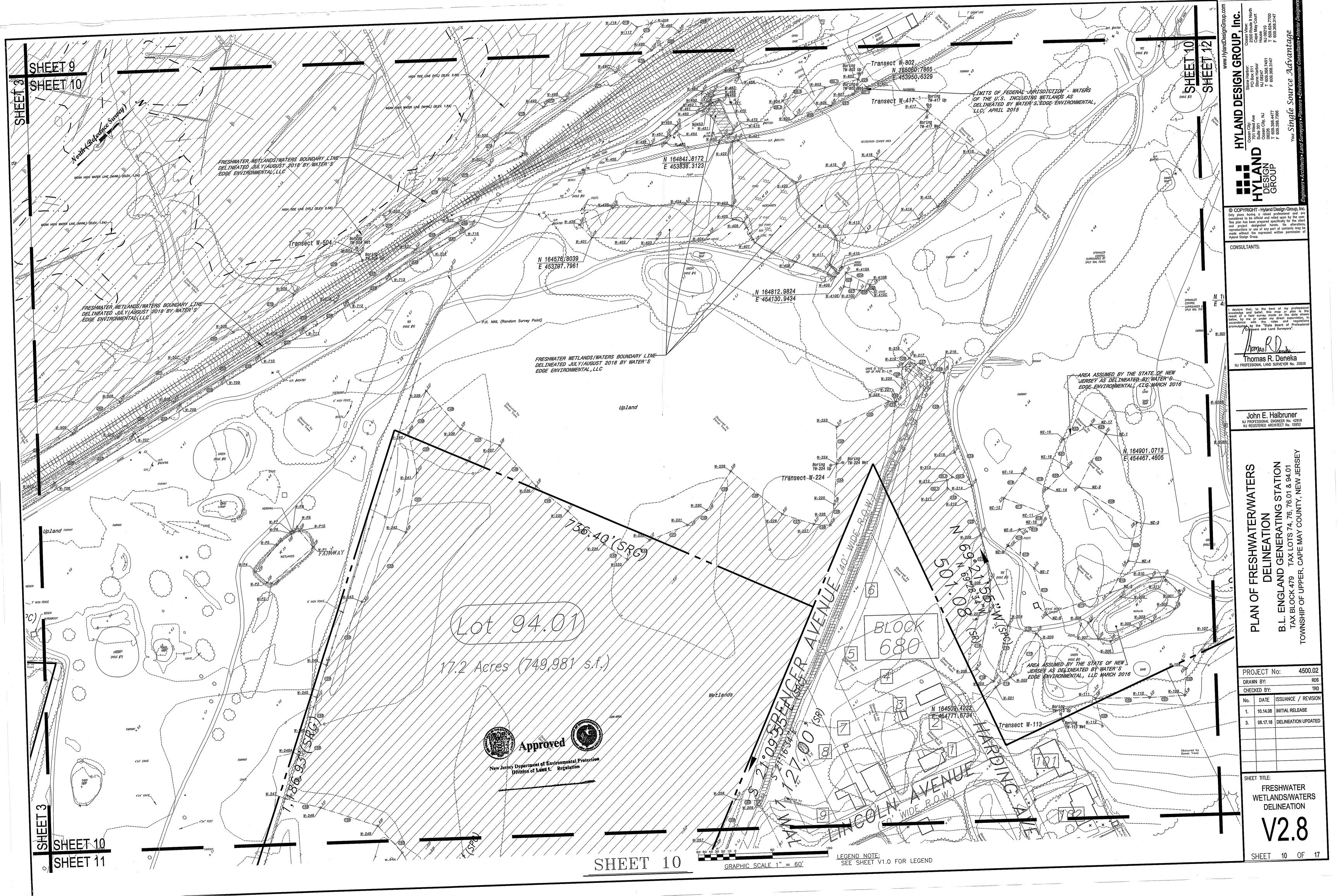
c: Municipal Clerk Municipal Construction Official Agent (original)

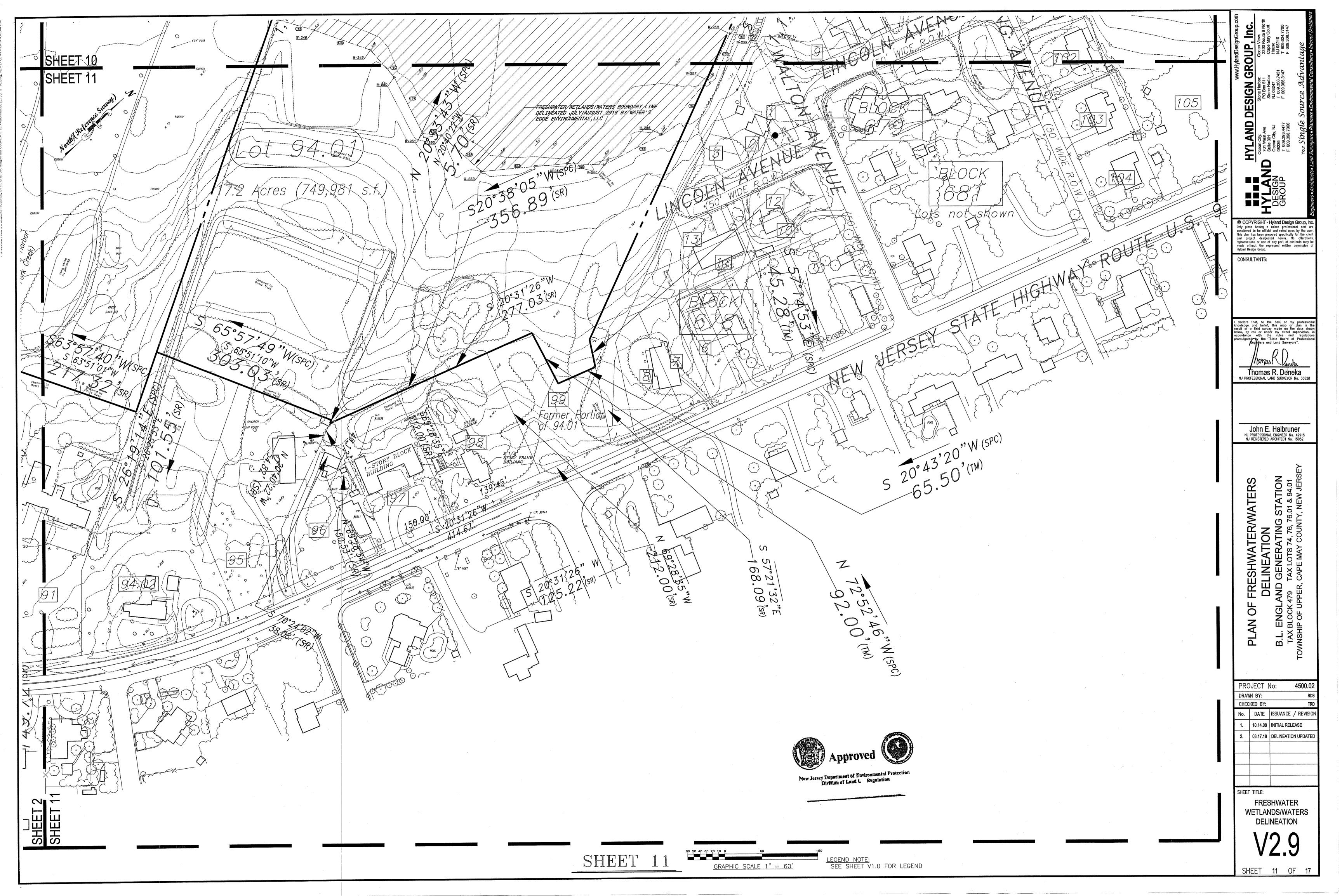
10 11 14

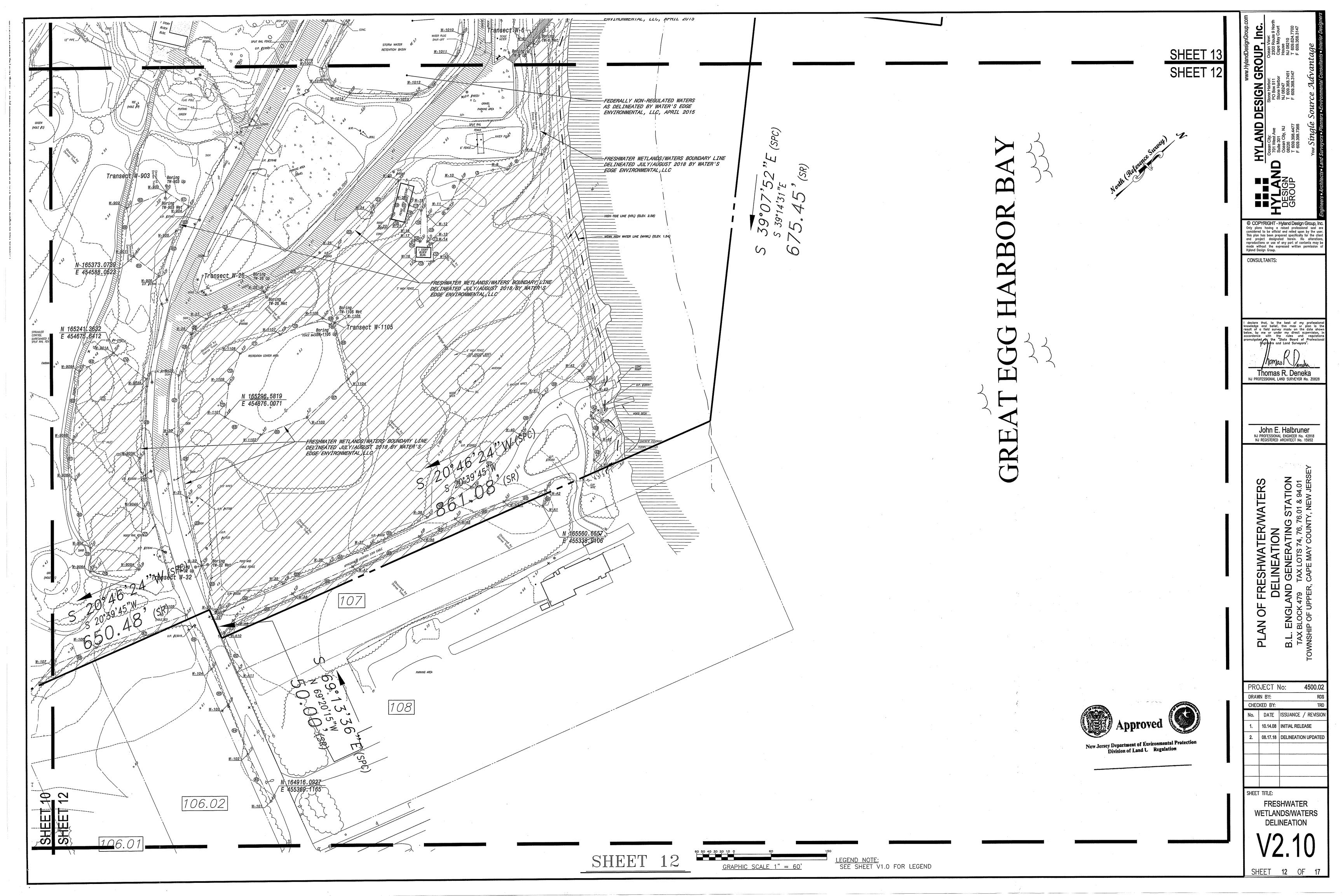
n han bin en aller er en besker er en sterne sterne sterne som en er et sterne sterne sterne sterne sterne av Det som han mutationer erkensen er en sterne sterne besker er av ståra pår kommer sterne sterne sterne ster Han sammer av det sterne st and grave and other statistics of the second sec The grave and the second se The second se The second The second s The second seco

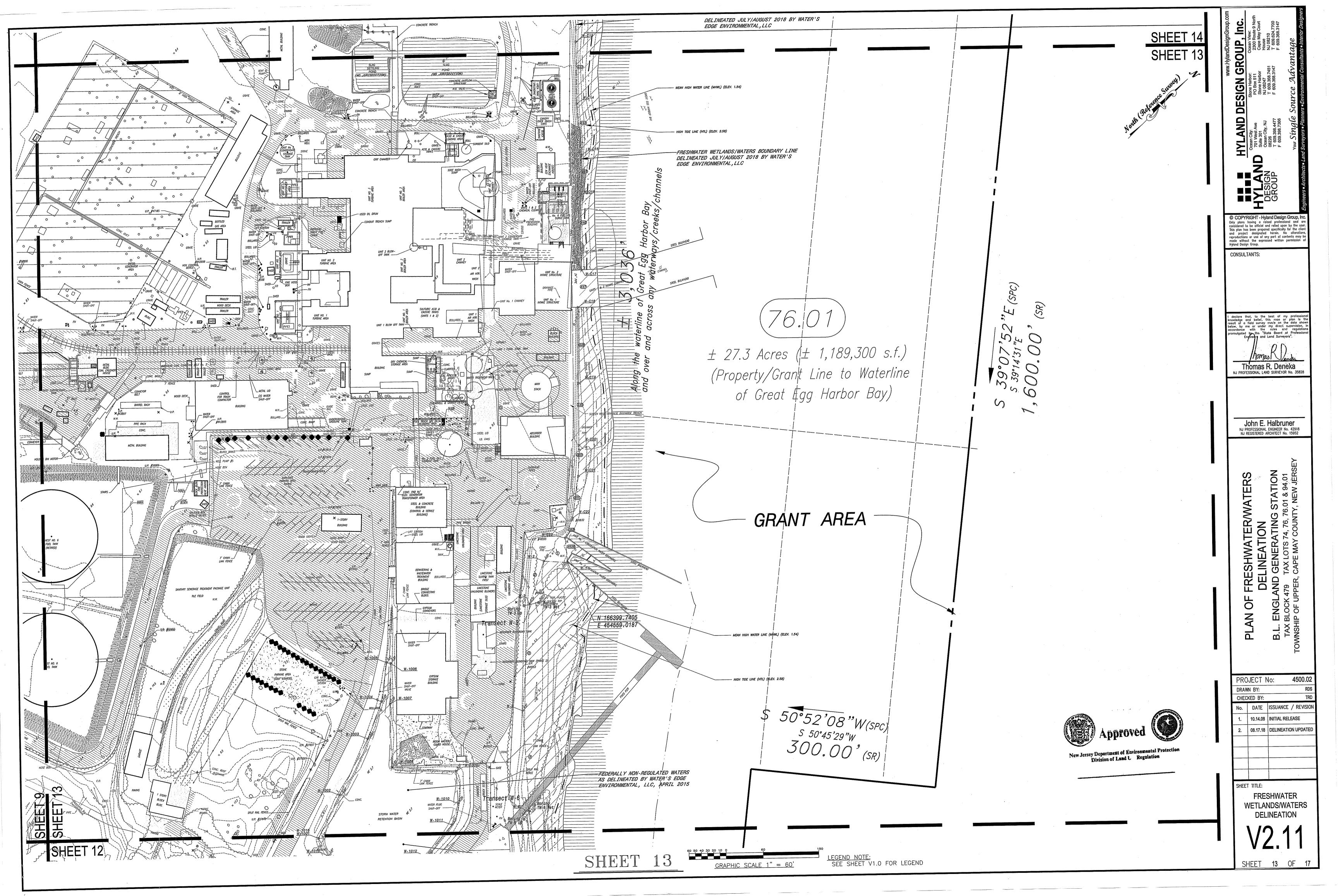
Beerse create desta dependence frances of an one categories in the foregate dependence and a construction of a Part 1977 and second frances actual and the construction of the construction of the construction of the construct i and a second secon (1997 – 1997 – 1997 – 1997 – 1997 – 1997 – 1997 – 1997 – 1997 – 1997 – 1997 – 1997 – 1997 – 1997 – 1997 – 1997 1997 – 1997 – 1997 – 1997 – 1997 – 1997 – 1997 – 1997 – 1997 – 1997 – 1997 – 1997 – 1997 – 1997 – 1997 – 1997 – Alalalitication of the













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
pplicant/Owner: Orsted			State: NJ Sampling Point: WL-A-UP
vestigators: James Eberhard	It Zachary L	.ehmann	Section, Township, Range S T Upper R
andform (hillslope, terrace, etc.):		Local Reli	elief (concave, convex, none): None Slope(%) 0
ubregion (LRRor MLRA): Outer	Coastal Plain (L Lat: 39	.25795444	Long: -74.63676497 Datum: Decimal Degrees
oil Map Unit Name: Urban Lar	nd		NWI Classification: E2EM1P
e climatic / hydrologic conditions	on the site typical for this ti	me of year? Yes	X No (If No, explain in Remarks)
e Vegetation, Soil,			Are "Normal Circumstances" present? Yes X No
e Vegetation, Soil,			
			(If needed, explain any answers in Remarks.)
UMMARY OF FINDINGS	 Attach a site map s 	howing sampling	g point locations, transects, important features, etc.
Hydrophytic Vegetation Present?	Yes No X		
Hydric Soil Present?	Yes No X	Is the Sampled within a Wetland	
Wetland Hydrology Present?	Yes No X	within a wetland	na? Yes No X
etland Hydrology Indicators:	e is required: check all that	apply)	Secondary Indicators (minimum of two required)
Vetland Hydrology Indicators: Primary Indicators (minimum of on			Surface Soil Cracks (B6)
Yetland Hydrology Indicators: Primary Indicators (minimum of on Surface Water (A1)	Aquat	ic Fauna (B13)	Surface Soil Cracks (B6)
Vetland Hydrology Indicators: Primary Indicators (minimum of on	Aquat	ic Fauna (B13) Deposits (B15) (LRR U)	Surface Soil Cracks (B6)
High Water Table (A2)	Aquat	ic Fauna (B13) Deposits (B15) (LRR U) gen Sulfide Odor (C1)	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16)
Vetland Hydrology Indicators: Primary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3)	Aquat Aquat Marl I Hydro Oxidiz	ic Fauna (B13) Deposits (B15) (LRR U)	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16)

Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Water-Stained Leaves (B9)		 Thin Muck Surface (C7) Other (Explain in Remarks) 	 Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Sphagnum moss (D8) (LRR T,U)
Field Observations:			
Surface Water Present?	Yes N	lo X Depth (inches):	
Water Table Present?	Yes N	lo X Depth (inches):	
Saturation Present?	Yes N	lo X Depth (inches):	Wetland Hydrology Present? Yes No _X
(includes capillary fringe)			
Remarks:	gauge, monitoring weil	I, aerial photos, previous inspections), if ava	
No wetland hydrology present			



VEGETATION_ Use scientific names of plants.

Sampling Point: WL-A-UP

ITee Stratum Number of Dominant Species Shrub Stratum Percent of Dominant Species Pag pratensis 80 Y Pag pratensis 10 N Stratum (Plot size: 30 Ft) 90 Toxicodenciron radicans 10 N FACW Percent of Dominant Species Toxicodenciron radicans 10 N FACW Provalence Index Worksheet: Toxicodenciron radicans 10 N FACW FACW Provalence Index Worksheet: Total % Cover of: Multi Stratum (Plot size: 30 Ft) Toxicodenciron radicans 10 N FAC FACW Provalence Index # A Plot Stratum VPL species 0 x5 = Column Totals: 100 (A) Provalence Index # 3.0 Provalence Index # 3.0 Problematic Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation Indicators of Hydrophytic Vegetation Strata: Tree - Woody plants, excluding woody approximately 20 ft (6 m) or more in he (7.6 m) or more in he (7.6 m) or DBH. Shrub – Woody plants, excluding woody approx			Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet:
Shrub Stratum (Plot size: <u>6 Ft</u>)) Poa pratensis 10 N FACU <u>Boa</u>	m		<u> </u>			
Jeb Stratum (Plot size: <u>6 Ft</u>) Poa pratensis 10 N FACU <u>Boa</u> _artoans 90_artoans Percent of Dominant Species Percent of Dominant Species <u>Mine Stratum</u> (Plot size: <u>30 Ft</u>) 10 N FACU <u>Toxicodendron radicans</u> 10 N FAC Percent of Dominant Species <u>10</u> _artoal Cover 10 N FAC Percent of Dominant Species Mult <u>10</u> _artoal Cover 10 N FAC FAC Percent of Dominant Species 0 x1 = <u>10</u> _artoal Cover 10 N FAC FAC FAC Species 10 x2 = FAC Species 10 x4 = UPL species 0 x5 = Column Totals: 100 (A) Prevalence Index = 8/A = Hydrophytic Vegetation Indicators: 1 Rapid Test for Hydrophytic V 2: Dominance Test > 50% 3: Prevalence Index = 3.0 Problematic Hydrophytic Vegetation Strata: Tree – Woody plants, excluding woody approximately 20 ft (6 m) or more in he than 3 in. (7.6 m) DBH. Shrub – Woody plants, excluding wood approximately 20 ft (6 m) or more in he than 3 in. (7.6 m) or more in he than 3 in. (7.6 m) DBH. <td>tum</td> <td></td> <td></td> <td></td> <td></td> <td></td>	tum					
Poa pratensis 80 Y FACU Echinochioa crus-galli 10 N FACW 90 =Total Cover 90 =Total Cover 90 =Total Cover Total % Cover of: Multi OBL species 0 X 1 = FACW species 10 X 1 = FACW species 0 X 2 = FAC species 0 X 3 = FACU species 0 0 0	um (Plo	ot size: 6 Ft)				
Lutilicatude dosignam 10 I A I Active 90 = Total Cover That Are OBL, FACW, or FAC: 90 = Total Cover Total % Cover of: Multi 10 N FAC 10 N FAC 10 = Total Cover Total % Cover of: Multi OBL species 0 x 1 = FAC species 10 x 2 = FAC species 0 x 5 = Column Totals: 100 (A) Prevalence Index = B/A= Hydrophytic Vegetation Indicators: 10 = Total Cover 10 11 = Total Cover 10 12 = Total Cover 10 Prevalence Index = B/A= UPL species 0 10 = Total Cover 10 Prevalence Index = 3.0 Prevalence Index = 3.0 Problematic Hydrophytic Vegetation Indicators: 10 11 -Rapid Test for Hydrophytic Vegetation Strate: 12 Tree -Woody plants, excluding woody approximately 20 ft (fm) or more in he (7.6 cm) DBH. Shrub - Woody plants, excluding woody approximately 20 ft (fm) or more in he (7.6 c	-	, <u>, , , , , , , , , , , , , , , , , , </u>	80	Y	FACU	
90 =Total Cover Toxicodendron radicans 10 N FAC 10 = Total Cover Total % Cover of: Multi OBL species 0 x1 = FAC species 10 x3 = FACU species 0 x5 = Column Totals: 100 (A) Prevalence Index # B/A= Hydrophytic Vegetation Indicators: 10 = Total Cover - FACU species 0 x5 = Column Totals: 100 (A) Prevalence Index = B/A= - Hydrophytic Vegetation Indicators: - - 2 - Dominance Test > 50% 3 - - 3 - Prevalence Index = 3.0 - - Problematic Hydrophytic Vegetation Indicators of hydrophytic Vegetation Indicators of hydrophytic Vegetation Strate: - Tree - Woody plants, excluding woody plants, excluding woody approximately 20 ft (6 m) or more in he than 3 matery 20 ft (6 m) or more in he than 3 matery 20 ft (10 ft m) in he thaceous vines, regardless of size. Shrub - Woody plants, excluding woody approximately 20 ft (10 ft m) in he thaceous vines, regardless of size. - Problematic Hydrophydy vines, less than a thaceous vines, regardless of sis	chloa crus-galli		10	Ν	FACW	
Vine Straum (Plot size: <u>30 Ft</u>) Toxicoderdron radicans 10 N FAC 10 =Total Cover Total % Cover of: Multi GBL species 0 x 1 = FACW species 10 x 2 = FACW species 0 x 3 = FACU species 0 x 5 = Column Totals: 100 (A) Prevalence Index = B/A= Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation Indicators of hydric soil and wetland hydro be present, unless disturbed or problemati Definitions of Vegetation Strate: Tree – Woody plants, excluding woody approximately 20 th (6 m) or more in he than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody approximately 20 th (6 m) or more in he than 3 in. (7.6 cm) DBH. Shrub – All herbaceous (non-woody) plants, excluding woody approximately 3 to 20 ft (1 to 6 m) in hot thathases of size.1 <			90	_=Total Cover		
Toxicodendron radicans 10 N FAC 10 =Total Cover OBL species 0 x1 = FACW species 10 x2 = FACU species 0 x3 = FACU species 0 x4 = UPL species 0 x5 = Column Totals: 100 (A) Prevalence Index = B/A= Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation Indicators of hydric soil and wetland hydrophytic Vege	m(Plc	ot size: <u>30 Ft</u>)				
10 =Total Cover FACW species 10 x3 = FACU species 80 x4 = UPL species 0 x5 = Column Totals: 100 (A) Prevalence Index = B/A= Hydrophytic Vegetation Indicators: 1 Rapid Test for Hydrophytic Vegetation Indicators: 2 Dominance Test > 50% 3 Prevalence Index ≤ 3.0 Problematic Hydrophytic Vegetation by problematic Hydrophytic Vegetation by problematic Bislurbed or problematic Bislerbed or pror	dendron radicans		10	Ν	FAC	
FAC species 10 x3 = FACU species 80 x4 = UPL species 0 x5 = Column Totals: 100 (A) Prevalence Index = B/A= Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation Indicators: 2 - Dominance Test > 50% 3 - Prevalence Index ≤ 3.0			10	_=Total Cover		
FACU species 80 x 4 = UPL species 0 x 5 = Column Totals: 100 (A) Prevalence Index = B/A= Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Ve 2 - Dominance Test > 50% 3 - Prevalence Index ≤ 3.0 Problematic Hydrophytic Vegetation Indicators of hydric soil and wetland hydro be present, unless disturbed or problemati Definitions of Vegetation Strata: Tree - Woody plants, excluding wood approximately 20 ft (6 m) or more in he than 3 in. (7.6 cm) DBH. Shrub - Woody plants, excluding wood approximately 3 to 20 tt (1 to 6 m) in he than 3 in. (7.6 cm) DBH.						10 00
UPL species 0 x 5 = Column Totals: 100 (A) Prevalence Index = B/A= - Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test > 50% 3 - Prevalence Index ≤ 3.0						
Column Totals: 100 (A) Prevalence Index = B/A= Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Veg 2 - Dominance Test > 50% 3 - Prevalence Index ≤ 3.0 Problematic Hydrophytic Vegetation Indicators of hydric soil and wetland hydro be present, unless disturbed or problemation Definitions of Vegetation Strata: Tree – Woody plants, excluding woody approximately 20 ft (6 m) or more in he (7.6 cm) Or larger in diameter at breast Sapling – Woody plants, excluding wood approximately 20 ft (6 m) or more in he than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding wood approximately 3 to 20 ft (1 to 6 m) in he Herb – All herbaceous (non-woody) pla herbaceous vines, regardless of size. 1 plants, exceludiong vines, less than a						
Prevalence Index = B/A= Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Veg 2 - Dominance Test > 50% 3 - Prevalence Index ≤ 3.0 Problematic Hydrophytic Vegetat Indicators of hydric soil and wetland hydroi be present, unless disturbed or problematic Definitions of Vegetation Strata: Tree – Woody plants, excluding woody approximately 20 ft (6 m) or more in he (7.6 cm) or larger in diameter at breast Sapling – Woody plants, excluding wood approximately 20 ft (6 m) or more in he than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding wood approximately 3 to 20 ft (1 to 6 m) in he than 3 in. (7.6 cm) wood plants, excluding wood approximately 3 to 20 ft (1 to 6 m) in he herbaceous vines, regardless of size. I plants, except woody vines, less than a						
1 - Rapid Test for Hydrophytic Ve 2 - Dominance Test > 50% 3 - Prevalence Index ≤ 3.0 Problematic Hydrophytic Vegetat Indicators of hydric soil and wetland hydrol be present, unless disturbed or problematic Definitions of Vegetation Strata: Tree – Woody plants, excluding woody approximately 20 ft (6 m) or more in he (7.6 cm) or larger in diameter at breast Sapling – Woody plants, excluding wood approximately 20 ft (6 m) or more in he than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding wood approximately 3 to 20 ft (1 to 6 m) in he herbaceous vines, regardless of size. I plants, except woody vines, less than a						Prevalence Index = B/A= 3.70
2 - Dominance Test > 50% 3 - Prevalence Index ≤ 3.0 Problematic Hydrophytic Vegetat Indicators of hydric soil and wetland hydrol be present, unless disturbed or problemati Definitions of Vegetation Strata: Tree – Woody plants, excluding woody approximately 20 ft (6 m) or more in he (7.6 cm) or larger in diameter at breast Sapling – Woody plants, excluding wood approximately 20 ft (6 m) or more in he than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding wood approximately 3 to 20 ft (1 to 6 m) in he than 3 in. (7.6 cm) DBH. Shrub – All herbaceous (non-woody) pla herbaceous vines, regardless of size. I plants, except woody vines, less than a						Hydrophytic Vegetation Indicators:
3 - Prevalence Index ≤ 3.0 Problematic Hydrophytic Vegetati Indicators of hydric soil and wetland hydroide present, unless disturbed or problemati Definitions of Vegetation Strata: Tree – Woody plants, excluding woody approximately 20 ft (6 m) or more in he (7.6 cm) or larger in diameter at breast Sapling – Woody plants, excluding wood approximately 20 ft (6 m) or more in he than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding wood approximately 3 to 20 ft (1 to 6 m) in he than 3 in. (7.6 cm) DBH. Shrub – All herbaceous (non-woody) plants, regardless of size. I plants, except woody vines, less than a size.						1 - Rapid Test for Hydrophytic Vegetation
Problematic Hydrophytic Vegetat Indicators of hydric soil and wetland hydroi be present, unless disturbed or problemati Definitions of Vegetation Strata: Tree – Woody plants, excluding woody approximately 20 ft (6 m) or more in he (7.6 cm) or larger in diameter at breast Sapling – Woody plants, excluding woo approximately 20 ft (6 m) or more in he than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding wood approximately 3 to 20 ft (1 to 6 m) in he Herb – All herbaceous (non-woody) pla herbaceous vines, regardless of size. 1 plants, except woody vines, less than a						2 - Dominance Test > 50%
Indicators of hydric soil and wetland hydroi be present, unless disturbed or problemati Definitions of Vegetation Strata: Tree – Woody plants, excluding woody approximately 20 ft (6 m) or more in he (7.6 cm) or larger in diameter at breast Sapling – Woody plants, excluding wood approximately 20 ft (6 m) or more in he than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding wood approximately 3 to 20 ft (1 to 6 m) in he Herb – All herbaceous (non-woody) pla herbaceous vines, regardless of size. I plants, except woody vines, less than a						3 - Prevalence Index ≤ 3.0
be present, unless disturbed or problemati Definitions of Vegetation Strata: Tree – Woody plants, excluding woody approximately 20 ft (6 m) or more in he (7.6 cm) or larger in diameter at breast Sapling – Woody plants, excluding wood approximately 20 ft (6 m) or more in he than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding wood approximately 3 to 20 ft (1 to 6 m) in he Herb – All herbaceous (non-woody) pla herbaceous vines, regardless of size. I plants, except woody vines, less than a						Problematic Hydrophytic Vegetation (Explain)
Definitions of Vegetation Strata: Tree – Woody plants, excluding woody approximately 20 ft (6 m) or more in he (7.6 cm) or larger in diameter at breast Sapling – Woody plants, excluding wood approximately 20 ft (6 m) or more in he than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding wood approximately 3 to 20 ft (1 to 6 m) in he herbaceous vines, regardless of size. I plants, except woody vines, less than a						Indicators of hydric soil and wetland hydrology must
approximately 20 ft (6 m) or more in he (7.6 cm) or larger in diameter at breast Sapling – Woody plants, excluding wood approximately 20 ft (6 m) or more in he than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding wood approximately 3 to 20 ft (1 to 6 m) in he Herb – All herbaceous (non-woody) pla herbaceous vines, regardless of size. I plants, except woody vines, less than a						
 (7.6 cm) or larger in diameter at breast Sapling – Woody plants, excluding wood approximately 20 ft (6 m) or more in he than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding wood approximately 3 to 20 ft (1 to 6 m) in he disproximately 3 to 20 ft (1 to 6 m) in he herbaceous vines, regardless of size. I plants, except woody vines, less than a sine statement of the statem						Tree – Woody plants, excluding woody vines,
approximately 20 ft (6 m) or more in he than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding wood approximately 3 to 20 ft (1 to 6 m) in he Herb – All herbaceous (non-woody) pla herbaceous vines, regardless of size. I plants, except woody vines, less than a						approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
approximately 3 to 20 ft (1 to 6 m) in he Herb – All herbaceous (non-woody) pla herbaceous vines, regardless of size. I plants, except woody vines, less than a						Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
herbaceous vines, regardless of size. I plants, except woody vines, less than a						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, regardle						Woody vine – All woody vines, regardless of height.
Hydrophytic Vegetation Present? Yes						Manufation Branchill



Depth (inches) Matrix Redox Features (inches) Color (moist) % Type 1 Loc 2 Texture Remarks 0 to 20 10YR 2 / 1 100 LOAMY SAND 1*Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. 2 Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: Polyvalue Below Surface (S9) (LRR S, T, U) Indicators for Problematic Hydric Soils; 3 Histos (h1) Thin Dark Surface (S9) (LRR S, T, U) 1 om Muck (A9) (LRR O) Btack Histic (A3) Loamy Gieyed Matrix (F2) Reduced Vertic (F18) (outside MLRA 150A,B) Hydrogen Suifide (A4) Loamy Gieyed Matrix (F2) Reduced Vertic (F18) (outside MLRA 150A,B) Stratified Layers (A5) Depleted Matrix (F3) Redox Depressions (F6) Stratified Layers (A5) Depleted Dark Surface (F7) Red Parent Material (TF2) Muck Presence (A8) (LRR P, T, U) Redox Depressions (F8) Orther (Explain in Remarks) Depleted Bow Dark Surface (A12) Iron-Manganese Masses (F12) (LRR P, T, U) Redox Depressions (F8) Orther (Explain in Remarks) Sandy Medox (A5) Debleto Cheric (F11) (MLRA 151) 3 Indicators of hydrophytic vegetation and wetland hydrologyr must be present, unless disturbed or problematic. <th>Profile Desc</th> <th></th> <th>e depth needed to docum</th> <th></th> <th></th> <th>onfirm t</th> <th>the absence of Indicators.)</th> <th></th>	Profile Desc		e depth needed to docum			onfirm t	the absence of Indicators.)	
0 to 20 10YR 2 / 1 100 LOAMY SAND 'Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. * Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: Polyvalue Below Surface (S8) (LRR S, T, U) Indicators for Problematic Hydric Soils: 3 Histosol (A1) Thin Dark Surface (S8) (LRR S, T, U) 1 orm Muck (A9) (LRR O) Black Histic (A3) Loamy Mucky Mineral (F1) (LRR O) 2 orm Muck (A10) (LRR S) Hydrogen Suffice (A4) Loamy Gleyed Matrix (F2) Reduced Vertic (F18) (outside MLRA 150A,B) Organic Bodies (A6) (LRR P, T, U) Depleted Matrix (F2) Reduced Vertic (F19) (outside MLRA 150A,B) Organic Bodies (A6) (LRR P, T, U) Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) Muck Presence (A6) (LRR P, T, U) Depleted Dark Surface (F7) Red Parent Material (TF2) Muck Variace (A11) Depleted Ochric (F11) (MLRA 151) 3 Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Redox (S5) Reduced Vertic (F18) (MLRA 150A, 150B) 3 Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Redox (S5) Reduced Vertic (F18) (MLRA 150A, 150B) 3 Indicators of hydrophytic vegetation and wetland hydrology must be present,							— <u> </u>	
1Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. 2 Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: Polyvalue Below Surface (S8) (LRR S, T, U) Indicators for Problematic Hydric Soils: ³ Histosol (A1) Thin Dark Surface (S9) (LRR S, T, U) 1 or Muck (A9) (LRR O) Black Histic (A3) Loamy Mucky Mineral (F1) (LRR O) 2 or Muck (A10) (LRR S) Black Histic (A3) Loamy Gleyed Matrix (F2) Peduced Vertic (F18) (outside MLRA 150A, B) Organic Bodies (A6) (LRR P, T, U) Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) (MLRA 153B) S crim Muck (M9) (LRR P, T, U) Depleted Dark Surface (F6) (MLRA 153B) Muck Presence (A8) (LRR P, T) Redox Depressions (F8) Very Shallow Dark Surface (TF12) (LRR T, U) Depleted Below Dark Surface (A11) Depleted Ochric (F11) (MLRA 151) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) (LRR O, S) Deta Ochric (F13) (MLRA 150A) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S2) Deta Ochric (F13) (MLRA 150A) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Redox (S5) Reduced Vertic (F18) ((inches)		,,	%	Type 1			Remarks
Hydric Soil Indicators: Polyvalue Below Surface (S8) (LRR S, T, U) Indicators for Problematic Hydric Soils: 3 Histosol (A1) Thin Dark Surface (S9) (LRR S, T, U) 1 cm Muck (A9) (LRR O) Black Histic (A3) Loamy Mucky Mineral (F1) (LRR O) 2 cm Muck (A9) (LRR S) Hydrogen Suffide (A4) Depleted Matrix (F2) Reduced Vertic (F18) (outside MLRA 150A, B) Yatafiied Layers (A5) Depleted Matrix (F3) Reduced Vertic (F18) (outside MLRA 150A, B) Organic Bodies (A6) (LRR P, T, U) Redox Dark Surface (F7) Red Parent Material (T2) Muck Presence (A8) (LRR U) Redox Depressions (F8) Very Shallow Dark Surface (T12) (LRR T, U) Depleted Below Dark Surface (A11) Depleted Ochric (F11) (MLRA 151) 3 Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) (LRR O, S) Umbric Surface (F12) (MLRA 150A) Stripped Matrix (S4) Delta Ochric (F13) (MLRA 150A) Stripped Matrix (S6) Piedmont Floodplain Soils (F19) (MLRA 149A) Anomalous Bright Loamy Soils (F20) (MLRA 149A) Dark Surface (S7) (LRR P, S, T, U) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) Hydric Soil Present? Yes	0 to 20	10YR 2/1	100				LOAMY SAND	
Histosol (A1) Polyvalue Below Surface (S8) (LRR S, T, U) Immittation Tot Information (A2) Histic Epipedon (A2) Loamy Mucky Mineral (F1) (LRR O) 2 cm Muck (A10) (LRR S) Black Histic (A3) Loamy Mucky Mineral (F1) (LRR O) 2 cm Muck (A10) (LRR S) Hydrogen Suffide (A4) Depleted Matrix (F2) Piedmont Floodplain Soils (F19) (LRR P, S, T) Organic Bodies (A6) (LRR P, T, U) Redox Dark Surface (F6) (MLRA 153B) S 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) (LRR T, U) Depleted Below Dark Surface (A11) Depleted Ochric (F11) (MLRA 151) 3 Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) (LRR O, S) Umbric Surface (F13) (LRR P, T, U) 3 Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) (LRR O, S) Piedmont Floodplain Soils (F19) (MLRA 150A) 3 Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Stripped Matrix (S4) Delta Ochric (F17) (MLRA 150A) Hydric Soil Present? Yes	¹ Type: C=Co	ncentration, D=Depletion	n, RM=Reduced Martix, CS=	Covered or	Coated Sa	and Grai	ns. ² Location: PL=Pore Lin	ing, M=Matrix.
	Hydric Soil 1 Histosol (A Histosol (A Histic Epip Black Histi Hydrogen Stratified L Organic Bd 5 cm Muck Muck Press 1 cm Muck Depleted E Thick Dark Sandy Muc Sandy Rec Stripped M Dark Surfat Type: Depth (incl	Indicators: .1) edon (A2) c (A3) Sulfide (A4) ayers (A5) odies (A6) (LRR P, T, U) by Mineral (A7) (LRR P, T, U) ence (A8) (LRR U) c (A9) (LRR P, T) Below Dark Surface (A11) Surface (A12) rie Redox (A16) (MLRA 150/ cky Mineral (S1) (LRR O, S) yed Matrix (S4) dox (S5) latrix (S6) ce (S7) (LRR P, S, T, U) Sive Layer (if observe	 Polyvalue Belo Thin Dark Surf Loamy Mucky Loamy Gleyed Depleted Matri Redox Dark Surf Redox Depres Marl (F10) (LR Depleted Ochr Iron-Manganes Umbric Surfac Delta Ochric (F Reduced Vertio Piedmont Floo Anomalous Brit 	w Surface (S8 ace (S9) (LRF Vineral (F1) (L Matrix (F2) x (F3) urface (F6) Surface (F6) Surface (F7) sions (F8) R U) c (F11) (MLRA e Masses (F1 e (F13) (LRR I c (F13) (LRR I c (F18) (MLRA c (F18) (MLRA	8) (LRR S, T R S, T, U) LRR O) 12) (LRR O, 1 P, T, U) 51) A 150A, 150I E19) (MLRA	, U) P, T) B) 149A)	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 St (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface Other (Explain in Remarks) ³ Indicators of hydrophytic hydrology must be prese unless disturbed or problemation	Hydric Soils: ³ de MLRA 150A,B) (F19) (LRR P, S, T) oils (F20) (TF12) (LRR T, U) vegetation and wetland nt, lematic.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: BL England	City/County: Cape May C	ounty Sampling Date: 9/16/2019
Applicant/Owner: Orsted	Stat	e: NJ Sampling Point: WL-A-WET
Investigators: James Eberhardt Zachar	y Lehmann Section, To	ownship, Range S T Upper R
Landform (hillslope, terrace, etc.): Toe of Slope	Local Relief (concave, co	nvex, 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 Classification: E2EM1Pd
Are climatic / hydrologic conditions on the site typical for this	s time of year? Yes X No	(If No, explain in Remarks)
Are Vegetation, Soil, Hydrology, signi	icantly disturbed? Are "Norma	I Circumstances" present? Yes X No
Are Vegetation, Soil, Hydrology, natur	ally problematic? (If needed	l, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach a site map		
SUMMART OF FINDINGS - Allacit a sile lilap	showing sampling point location	ons, transects, important leatures, etc.
Hydrophytic Vegetation Present? Yes X No		
Hydric Soil Present? Yes X No	Is the Sampled Area within a Wetland?	Yes X No
Wetland Hydrology Present? Yes X No		Yes X No
Area is a wetland based on presence of hydrophytic vegeta	alion, nyaric soli, and welland nyarology.	
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all t	nat apply)	Surface Soil Cracks (B6)
	uatic Fauna (B13) rl Deposits (B15) (LRR U)	Sparsely Vegetated Concave Surface (B8)Drainage Patterns (B10)
Water Marks (B1) Ox Sediment Deposits (B2) Pre	drogen Sulfide Odor (C1) idized Rhizospheres along Living Roots (C3) ssence of Reduced Iron (C4)	Moss Trim Lines (B16) Dry-Season Water Table (C2) Crayfish Burrows (C8)
Algal Mat or Crust (B4)	cent Iron Reduction in Tilled Soils (C6) in Muck Surface (C7) ner (Explain in Remarks)	 Saturation Visible on Aerial Imag.(C9) Geomorphic Position (D2) Shallow Aquitard (D3)

Iron Deposits (B5)	acon (R7)	_	ner (Explain in Rema	·ks)	Shallow Aquitard (D3)	
Water-Stained Leaves (B9)	igery (D7)				Sphagnum moss (D8) (LF	RR T,U)
Field Observations:						
Surface Water Present?	Yes No	Х	Depth (inches):			
Water Table Present?	Yes X No		Depth (inches):	15		
Saturation Present?	Yes X No		Depth (inches):	0	Wetland Hydrology Present?	Yes <u>X</u> No
(includes capillary fringe)						
Describe Recorded Data (stream ga	uge, monitoring well, a	erial photo	s, previous inspectior	ns), if available:		
Remarks:						
Wetland hydrology present						



VEGETATION_ Use scientific names of plants.

Sampling Point: WL-A-WET

Tree Stratum						
					Number of Dominant Species That Are OBL, FACW, or FAC:1	(
Shrub Stratum						_ `
Herb Stratum	(Plot size: 6 Ft)				Total Number of Dominant Species Across all Strata: 1	(1
Spartina patens	(100	Y	FACW	·	_ (
		100	=Total Cover		Percent of Dominant Species 100.0% That Are OBL, FACW, or FAC:	_ (/
/ine Stratum					Prevalence Index Worksheet:	
					Total % Cover of: Multiply by:	
					OBL species 0 x 1 = 0	
					FACW species X 2 = 200	
					FAC species X 3 = 0	
					FACU species x 4 = 0	
					UPL species X 5 = 0	-
					Column Totals:(A)200	
					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 (Ex	pla
					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 (7.6 cm) or larger in diameter at breast height (I	3 i DB
					Sapling – Woody plants, excluding woody vines approximately 20 ft (6 m) or more in height and 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, inclu herbaceous vines, regardless of size. Includes plants, except woody vines, less than approxim 3 ft (1 m) in height.	wc
					Woody vine – All woody vines, regardless of he	igł
					Hydrophytic Vegetation Present? Yes <u>X</u> No	



SOIL

Profile Description: (Describe to the	depth needed to docun			the absence of Indicators.)	
Depth Matrix	<u> </u>		Features		Dementer
(inches) Color (moist)	% Color (mois	t) %	Type ¹ Loc ²	Texture	Remarks
0 to 10 /					Fiberous peat
10 to 20 10YR 4/1	100			SANDY LOAM	Muck
¹ Type: C=Concentration, D=Depletion,	RM=Reduced Martix, CS	=Covered or	r Coated Sand Gra	ins. ² Location: PL=Pore Lin	ing, 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 Redox (S5) Stripped Matrix (S6)	 Thin Dark Su Loamy Mucky Loamy Gleye Depleted Mat Redox Dark S Depleted Dar Redox Depre Marl (F10) (LI Depleted Och Iron-Mangane Umbric Surfa Delta Ochric Reduced Ver 	rface (S9) (LRI v Mineral (F1) (d Matrix (F2) rix (F3) Surface (F6) k Surface (F6) k Surface (F7) ssions (F8) RR U) rric (F11) (MLR ce (F13) (LRR (F17) (MLRA 1 tic (F18) (MLR.	(LRR O) RA 151) 12) (LRR O, P, T) P, T, U)	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) ³ Indicators of hydrophytic hydrology must be prese unless disturbed or problematic	de MLRA 150A,B) F19) (LRR P, S, T) oils (F20) (TF12) (LRR T, U) vegetation and wetland nt,
Dark Surface (S7) (LRR P, S, T, U)	Anomalous B	right Loamy So	oils (F20) (MLRA 149	A, 153C, 153D)	
□ Restrictive Layer (if observed	d):				
Туре:				Hydric Soil Present?	Yes X No
Depth (inches):				Hydric Soli Present!	
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-B-UP
Investigators: James Eberhardt Zachary Lehmann	Section, Township, Range S T Upper R
Landform (hillslope, terrace, etc.): Local Rel	lief (concave, convex, none): None Slope(%) 0
Subregion (LRRor MLRA): Outer Coastal Plain (L Lat: 39.25813828	Long: -74.63665559 Datum: Decimal Degrees
Soil Map Unit Name: Urban Land	NWI Classification:
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, etc.
Hydrophytic Vegetation Present? Yes No X	A
Hydric Soil Present? Yes No X Is the Sampled within a Wetlan	
Wetland Hydrology Present? Yes No X	Yes <u>No X</u>
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) Aquatic Fauna (B13) High Water Table (A2) Marl Deposits (B15) (LRR U) Saturation (A3) Hydrogen Sulfide Odor (C1) Water Marks (B1) Oxidized Rhizospheres along Liv Sediment Deposits (B2) Presence of Reduced Iron (C4) Drift Deposits (B3) Recent Iron Reduction in Tilled S Algal Mat or Crust (B4) Thin Muck Surface (C7) Iron Deposits (B5) Other (Explain in Remarks) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9)	Crayfish Burrows (C8)
Field Observations:	
Surface Water Present? Yes No X Depth (inches):	
Water Table Present? Yes No X Depth (inches):	Wetland Hydrology Present? Yes No_X_
Saturation Present? Yes <u>No X</u> Depth (inches): <u></u>	

(includes capillary fringe)

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

Remarks:

No wetland hydrology present



VEGETATION_ Use scientific names of plants.

Sampling Point: WL-B-UP

	<u>Absolute</u> <u>% Cover</u>	Dominant Species	Indicator Status	Dominance Test Worksh			
Tree Stratum				Number of Dominant Spe That Are OBL, FACW, or		0	(A
Shrub Stratum (Plot size: 30 Ft)					-		
lva frutescens	20	Ν	FACW	Total Number of Dominant Species Across all Strata:		1	(E
	20	=Total Cover			=	•	
Herb Stratum (Plot size: 6 Ft)				Percent of Dominant Spec That Are OBL, FACW, or I		0.0%	(A
Poa pratensis	80	Y	FACU				
Echinochloa crus-galli	10	Ν	FACW	Prevalence Index Works			
Phragmites australis	10	Ν	FACW	Total % Cover of:		Itiply by:	
	100	=Total Cover		OBL species 0			
/ine Stratum (Plot size: 30 Ft)				FACW species 40	x 2 :	= 80	
Toxicodendron radicans	10	Ν	FAC	FAC species 10	x 3 :	= 30	
	10	=Total Cover		FACU species 80	x 4 :	= 320	
				UPL species 0	x 5 :	0	
				Column Totals: 130	D (A)	430	(
				Prevalence Index =	B/A=	3.31	
				Hydrophytic Vegetation In	ndicators	:	
				1 - Rapid Test for Hyd	rophytic V	egetation	ı
				2 - Dominance Test >	50%		
				3 - Prevalence Index s	≤ 3.0		
				Problematic Hydrophy	tic vegeta	ation (Ex	pia
				Indicators of hydric soil and w be present, unless disturbed of			
				Definitions of Vegetation S	Strata:		
				Tree – Woody plants, exclud approximately 20 ft (6 m) or (7.6 cm) or larger in diameter	more in h	eight and	3 iı DBI
				Sapling – Woody plants, ex approximately 20 ft (6 m) or than 3 in. (7.6 cm) DBH.			
				Shrub – Woody plants, excl approximately 3 to 20 ft (1 to			
				Herb – All herbaceous (non- herbaceous vines, regardles plants, except woody vines, 3 ft (1 m) in height.	s of size.	Includes	woo
				Woody vine – All woody vine	es, regard	less of he	eigh
				Hydrophytic Vegetation Present?	Yes	No	x
narks: (Include photo numbers here or on a separate she	et.)						



SOIL

Profile Desci	ription: (Des		depth ne	eded to document			confirm	the absence of Indicators.)	
Depth		Matrix		<u></u>		eatures		<u> </u>	_
(inches)		r (moist)	%	Color (moist)	%	Type 1	Loc 2	Texture	Remarks
0 to 2	10YR	2/1	100					SAND	Roots present
2 to 6	10YR	6/2	100					SAND	
¹ Type: C=Cor	ncentration, I	D=Depletion,	RM=Redu	iced Martix, CS=Co	overed or	Coated S	and Gra	ins. ² Location: PL=Pore Lir	ning, M=Matrix.
Stratified L Grganic Bc S cm Muck Muck Pres I cm Muck Depleted E Thick Dark Coast Prai Sandy Muc	1) edon (A2) c (A3) Sulfide (A4) ayers (A5) odies (A6) (LRF y Mineral (A7) ence (A8) (LRR (A9) (LRR P, Below Dark Sur Surface (A12) rie Redox (A16 cky Mineral (S1 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 Surfa Depleted Dark Surfa Depleted Dark Surfa Redox Depression Marl (F10) (LRR L Depleted Ochric (I Iron-Manganese M Umbric Surface (F Delta Ochric (F17) Reduced Vertic (F 	(S9) (LRi eral (F1) (ttrix (F2) (F3) (cc (F6) (face (F7) (rface (F7) (F8) (J) (F11) (MLF (Masses (F (F13) (LRR) (MLRA 1)	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) (outs Piedmont Floodplain Soils Anomalous Bright Loamy S (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface Other (Explain in Remarks) ³ Indicators of hydrophytic hydrology must be prese unless disturbed or prob	side MLRA 150A,B) (F19) (LRR P, S, T) Soils (F20) e (TF12) (LRR T, U)) c vegetation and wetland ent,
Stripped M			[Piedmont Floodpl					
Dark Surfa	ce (S7) (LRR I	P, S, T, U)	[Anomalous Bright				A, 153C, 153D)	
Restrict Type: <u>C</u> Depth (incl Remarks:		if observe	d):					Hydric Soil Present?	Yes No _X

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: BL England				City/County:		Ocear	Ocean County			Sampling Date:		9/16/2019	
Applicant/Owne	er: Orsted						State:	NJ	Samplir	ng Point:	WL-B-W	/ET	
Investigators:	James Eberh	ardt	Zachary Leh	mann		Sectio	n, Towns	hip, Ran	ge S	T Upp	ber R		
Landform (hillsl	ope, terrace, etc.):			Local Relie	ef (concave	, convex,	, none):	Concave		Slope	(%) 0	
Subregion (LRF	Ror MLRA): Out	er Coastal Plain (L	Lat: 39.25	825091		Long:	-74.636	41882		Datun	n: Decimal	Degrees	
Soil Map Unit N	lame: Appoq	uinimink-Transqual	king-Mispillion	Complex			NV	VI Classi	fication:	E2EM1Pc	ł		
Are climatic / hy	ydrologic conditio	ns on the site typic	al for this time	of year?	Yes	X No		(If No, e	explain in F	(emarks)			
vre Vegetation	, Soil	, Hydrology	_, significantl	y disturbe	ed?	Are "No	ormal Circ	cumstan	ces" prese	nt? Ye	s X	No	
Are Vegetation, Soil, Hydrology, naturally problematic?							(If needed, explain any answers in Remarks.)						
-		S - Attach a si				,					,		
Remarks:	rology Present?	Yes X Yes X	No	withi	e Sampled <i>I</i> n a Wetland	1?	drology	Yes _	<u> </u>	lo			
IYDROLOGY Wetland Hydr	ology Indicators	:					Se	econdary	/ Indicators	s (minimu	m of two r	required)	
Primary Indicators (minimum of one is required; check all that apply)							Surface Soil Cracks (B6)						
Surface Wate	()		Aquatic F	auna (B13))			<u> </u>	sely Vegetat		e Surface (B8)	
High Water 1	()		Marl Dep	osits (B15)	(LRR U)			_	age Pattern	. ,			
Saturation (A	()		Marl Dep	, ,	· /			_	Trim Lines	. ,			

 Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 					lydrogen Sulfide Odor (C Ixidized Rhizospheres ald Iresence of Reduced Iron Recent Iron Reduction in ⁷ hin Muck Surface (C7) Other (Explain in Remarks) ong Living Roots (C3 (C4) Filled Soils (C6)	 Moss Trim Lines (B16) Dry-Season Water Table (C2) 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)
Field Observations:							
Surface Water Present?	Yes		No	Х	Depth (inches):		
Water Table Present?	Yes	Х	No		Depth (inches):	4	
Saturation Present?	Yes	Х	No		Depth (inches):	0	Wetland Hydrology Present? Yes X No
Describe Recorded Data (stream ga	uge, monit	toring v	vell, ae	rial pho	tos, previous inspections), if available:	
Remarks:							
Wetland hydrology present							



VEGETATION_ Use scientific names of plants.

Sampling Point: WL-B-WET

	Absolute % Cover	<u>Dominant</u> Species	Indicator Status	Dominance Test Workshee	t:		
Free Stratum				Number of Dominant Specie		1	(/
Shrub Stratum				That Are OBL, FACW, or F	AC:	-	_ (/
Herb Stratum (Plot size: 6 Ft)				Total Number of Dominant Species Across all Strata:		4	(0
Phragmites australis	100	Y	FACW	Species Across an Strata.		1	(E
lino Stratum	100	_=Total Cover		Percent of Dominant Species That Are OBL, FACW, or FA		100.0%	_ (A
/ine Stratum				Prevalence Index Workshe	et:		
				Total % Cover of:	Multip	oly 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	(
				Prevalence Index = B/	۹=	2.00	
				Hydrophytic Vegetation Ind	cators:		
				1 - Rapid Test for Hydro	ohytic Veo	getation	
				X 2 - Dominance Test > 50	1%		
				X 3 - Prevalence Index ≤ 3	.0		
				Problematic Hydrophytic	Vegetatio	on (Exp	ola
				Indicators of hydric soil and wetle be present, unless disturbed or p			
				Definitions of Vegetation Str	ata:		
				Tree – Woody plants, excludin approximately 20 ft (6 m) or m (7.6 cm) or larger in diameter a	ore in heig	ght and	3 i)B
				Sapling – Woody plants, exclu approximately 20 ft (6 m) or m than 3 in. (7.6 cm) DBH.			
				Shrub – Woody plants, exclud approximately 3 to 20 ft (1 to 6	ng woody m) in hei	vines, ght.	
				Herb – All herbaceous (non-we herbaceous vines, regardless plants, except woody vines, les 3 ft (1 m) in height.	of size. In	cludes v	NO
				Woody vine – All woody vines,	regardles	ss of he	igh
				Hydrophytic Vegetation Present? _{Ye}	s_X_	No	



Profile Desci	ription: (Describe to th	e depth nee	eded to document			confirm	the absence of Indicators.)	
Depth	Matrix		. <u></u>		eatures			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 to 8	/							Fiberous peat
8 to 20	10YR 4/1	100					LOAMY SAND	
¹ Type: C=Cor	ncentration, D=Depletior	n, RM=Redu	ced Martix, CS=Co	overed or	Coated S	Sand Gra	ains. ² Location: PL=Pore Linir	ng, M=Matrix.
5 cm Muck Muck Press 1 cm Muck Depleted B Thick Dark	1) edon (A2) c (A3) Sulfide (A4) ayers (A5) odies (A6) (LRR P, T, U) y Mineral (A7) (LRR P, T, U ence (A8) (LRR U) . (A9) (LRR P, T) Below Dark Surface (A11) . Surface (A12)	[[[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 	e (S9) (LR heral (F1) (atrix (F2) =3) ice (F6) irface (F7) ns (F8) J) 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) (outsid 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	de MLRA 150A,B) F19) (LRR P, S, T) bils (F20) TF12) (LRR T, U) vegetation and wetland
Sandy Muc Sandy Gley Sandy Red Stripped M Dark Surfa	atrix (S6) ce (S7) (LRR P, S, T, U)		Umbric Surface (F Delta Ochric (F17 Reduced Vertic (F Piedmont Floodpl Anomalous Bright	=13) (LRR) (MLRA 1 =18) (MLR ain Soils (P, T, U) 51) A 150A, 15 F19) (MLR/	0B) A 149A)	unless disturbed or proble 9A, 153C, 153D)	Pmatic.
Type: Depth (incl	ive Layer (if observe	ed):					Hydric Soil Present?	Yes X No
Remarks:								
Hydric soil pres	sent							

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-C-UP
Investigators: Zachary Lehmann Ja	ames Eberhardt	Section, Township, Range S T Upper R
Landform (hillslope, terrace, etc.):	Local Relief	(concave, convex, none): Slope(%) 0
Subregion (LRRor MLRA): Outer Coastal Plain (L	Lat: 39.25323647	Long: -74.61662583 Datum: Decimal Degrees
Soil Map Unit Name: Urban Land - Psamments		NWI Classification: E2EM1Pd
Are climatic / hydrologic conditions on the site typical f	or this time of year? Yes X	(If No, explain in Remarks)
Are Vegetation, Soil, Hydrology,	significantly disturbed?	Are "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, Hydrology,		(If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach a site	map snowing sampling po	oint locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No		
Hydric Soil Present? Yes No	• X Is the Sampled Ar	
Wetland Hydrology Present? Yes No	o X	Yes <u>No X</u>
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9)	 k 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	X Depth (inches): X Depth (inches):	

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

Yes _____

Х

Depth (inches):

No

Remarks:

Saturation Present?



Wetland Hydrology Present?

Yes ____ No_X__

VEGETATION_ Use scientific names of plants.

Sampling Point: WL-C-UP

		sheet:	Dominance Test Works	Indicator Status	Dominant Species	Absolute % Cover	
0			Number of Dominant S				Tree Stratum
		or FAC	That Are OBL, FACW,				Shrub Stratum
			Total Number of Domina				
2 (a:	Species Across all Strat	FACU	Y	50	Herb Stratum (Plot size: <u>6 Ft</u>) Poa pratensis
0.0% (/			Percent of Dominant Sp	FACW	- <u>- N</u>		Phragmites australis
(: —	or FAC	That Are OBL, FACW, o	FACW	N	10	Echinochloa crus-galli
	(=	ksheet	Prevalence Index Work		=Total Cover	80	
oly by:	Multip		Total % Cover of:				Vine Stratum (Plot size: 30 Ft)
0	x 1 =	0	OBL species	FACU	Y	15	Parthenocissus quinquefolia
60	x 2 =	30	FACW species	FAC	 N		Toxicodendron radicans
30	x 3 =	10	FAC species		=Total Cover	25	
260	x 4 =	65	FACU species				
0	x 5 =	0	UPL species				
350	(A)	05	Column Totals:1				
3.33	=	= B/A=	Prevalence Index				
	ators:	Indica	Hydrophytic Vegetation				
getation	ıytic Veg	ydroph	1 - Rapid Test for H				
	, D	> 50%	2 - Dominance Test				
		x < 3 0	3 - Prevalence Index				
n (Expla	egetatio	nytic v	Problematic Hydrop				
			Indicators of hydric soil and be present, unless disturbe				
	a:	n Strat	Definitions of Vegetation				
lants, excluding woody vines, 0 ft (6 m) or more in height and 3 in. er in diameter at breast height (DBH)			approximately 20 ft (6 m)				
			Sapling – Woody plants, e approximately 20 ft (6 m) than 3 in. (7.6 cm) DBH.				
			Shrub – Woody plants, ex approximately 3 to 20 ft (1				
cludes wo	size. Inc	less of	Herb – All herbaceous (no herbaceous vines, regardl plants, except woody vine 3 ft (1 m) in height.				
s of heigh	egardles	ines, re	Woody vine – All woody v				
No X		Yes	Hydrophytic Vegetation Present?				
	-		Hydrophytic				marks: (Include photo numbers here or on a separate sheet.)



Profile Descrip	•	e depth ne	eeded to documen			confirm	the absence of Indicators.)		
Depth (inches)	Matrix Color (moist)	%	Color (moist)	Redox %	Features Type 1	1 00 2	Texture	Remarks	e
0 to 1		100	Black	/0	туре	LUC -		Organic Layer	
1 to 4	10YR 5/2	80	10YR 4/6	20	С	M	LOAMY SAND		
¹ Type: C=Conc	entration, D=Depletion,	RM=Red	luced Martix, CS=Co	overed o	r Coated S	Sand Gra	ains. ² Location: PL=Pore Lin	ing, M=Matrix.	
5 cm Mucky I Muck Presen 1 cm Muck (/ Depleted Bel Thick Dark S Coast Prairie	lon (A2) (A3) Ifide (A4) ers (A5) es (A6) (LRR P, T, U) Mineral (A7) (LRR P, T, U) ice (A8) (LRR U) A9) (LRR P, T) ow Dark Surface (A11) urface (A12) Redox (A16) (MLRA 150A Mineral (S1) (LRR O, S) d Matrix (S4) c (S5)		 Polyvalue Below 3 Thin Dark Surface Loamy Mucky Mir Loamy Gleyed Ma Depleted Matrix (I Redox Dark Surfa Depleted Dark SL Redox Depressio Marl (F10) (LRR I Depleted Ochric (Iron-Manganese I Umbric Surface (I Delta Ochric (F17 Reduced Vertic (F Piedmont Floodpl 	e (S9) (LF heral (F1) atrix (F2) F3) ace (F6) urface (F7 ns (F8) J) F11) (MLI Masses (F F13) (LRF ') (MLRA (E18) (MLF	RR S, T, U) (LRR O)) FA 151) F12) (LRR C & P, T, U) 151) RA 150A, 15	o, P, T) 0B)	Indicators for Problematic 1 cm Muck (A9) (LRR 0) 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) ³ 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 wetla	
Dark Surface	e (S7) (LRR P, S, T, U)		Anomalous Bright				9A, 153C, 153D)		
✓ Restrictiv Type: <u>Con</u> Depth (inche Remarks: No hydric soils		d): 					Hydric Soil Present?	Yes N	lo <u>X</u>

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: BL England	City/County: Ocea	n County Sam	Sampling Date: 9/16/2019		
Applicant/Owner: Orsted		State: NJ Sam	oling Point: WL-C-WET		
Investigators: James Eberhardt Zacha	ry Lehmann Section	on, Township, Range S	T Upper R		
Landform (hillslope, terrace, etc.): Toe of Slope	Local Relief (concav	e, convex, none): None	Slope(%) 0		
Subregion (LRRor MLRA): Outer Coastal Plain (L Lat:	39.25329629 Long:	-74.61665836	Datum: Decimal Degrees		
Soil Map Unit Name: Pawcatuck-Transquaking Comple	ex	NWI Classification:	E2EM1P		
Are climatic / hydrologic conditions on the site typical for th	is time of year? Yes X No	(If No, explain ir	ı Remarks)		
Are Vegetation, Soil, Hydrology, sign	ificantly disturbed? Are "N	ormal Circumstances" pre	sent? Yes X No		
Are Vegetation, Soil, Hydrology, natu	urally problematic? (If ne	eded, explain any answers	s in Remarks.)		
SUMMARY OF FINDINGS - Attach a site ma Hydrophytic Vegetation Present? Yes X No Hydric Soil Present? Yes X No Wetland Hydrology Present? Yes X No Remarks: This even is a supplement loss of budgement is a supplement loss. Supplement loss of budgement is a supplement loss.	Is the Sampled Area within a Wetland?	Yes X	Mportant features, etc.		
This area is a wetland based on presence of hydrophytic	vegetation, nyunc son, and welland ny	nology.			
HYDROLOGY					
Wetland Hydrology Indicators:		Secondary Indicate	ors (minimum of two required)		

Primary Indicators (minimum of	f one is required; c	check all that apply)	Surface 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) 	gery (B7)	 Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (C2) 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) 	
Field Observations:			
Surface Water Present?	Yes No	X Depth (inches):	
Water Table Present?	Yes X No	Depth (inches): 16	
Saturation Present?	Yes X No	Depth (inches): 4	Wetland Hydrology Present? Yes X No
(includes capillary fringe)			
Describe Recorded Data (stream gau	ige, monitoring well, a	aerial photos, previous inspections), if available:	
Remarks:			
Surface water nearby			



VEGETATION_ Use scientific names of plants.

Sampling Point: WL-C-WET

Tree Stratum Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A) Shrub Stratum (Plot size: <u>30 Ft</u>) Total Number of Dominant Species Across all Strata: 2 (A)			Absolute <u>% Cover</u>	Dominant Species	Indicator Status	Dominance Test Work	sheet:		
Shub Stratum (Plot size: 30 Ft _) 10 Y FACW Herb Stratum (Plot size: 6 Ft _) 100 Y FACW Boarding patens 100 Y FACW Percelet of Dominant Species 100.0% (AB Yine Stratum 100 Y FACW Percelet of Dominant Species 100.0% (AB Yine Stratum 100 Y FACW Percelet of Dominant Species 100.0% (AB Yine Stratum 100 Y FACW Percelet of Dominant Species 100.0% (AB Yine Stratum 100 Y FACW FACW Species 110 x1 = 0 FACW species 0 x1 = 0 x1 = 0 FACW Species 0 x5 = 0 UPL species 0 x5 = 0 Column Totals: 110 (A) 22.00 Hydrophytic Vegetation Indicators: 110 (A) 22.00 Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 1 - - - - 1 - Rapid Test for Hydrophytic Vegetation Explanin - - - - 1 - Rapid Test	Tree Stratum							2	(A)
Image: stratum paters 10 -Total Cover Sparing paters 100 Y FACW Total Xec OBL, FACW, or FAC: 100.0%; (A/B Yine Stratum -Total Cover Percent of Dominant Species 100.0%; (A/B Yine Stratum -Total Cover Percent of Dominant Species 100.0%; (A/B Yine Stratum -Total Cover Percent of Dominant Species 0 x1 = 0 Yine Stratum -Total Scover of Multiply by: 0 - - - Yine Stratum		(Plot size: <u>30 Ft</u>)	10	Y	FACW	Total Number of Domina	ant		(D)
Herb Stratum (Plot size: 6 Ft) Sparting patients 100 Y 100 =Tobal Cover Prevented to CBL, FACW Prevalence Index Worksheet: Total % Cover of: Multiply by: OBL species 0 x1 = 0 X1 = 0 X4 = 0 UPL species 0 x2 = 0 FACU species 0 x 2 = 0 FACU species 0 x 2 = 0 0 FACU species 0<						Species Across all Strat	a:	2	_(B)
100 =Total Cover Yine Stratum Total % Cover of: Wine Stratum Total % Cover of: 08L species 0 x1 = FACW species 0 x2 = FACW species 0 x4 = UPL species 0 x4 = UPL species 0 x4 = Output species 0 x4 = Output species 0 x4 = UPL species 0 x5 = Column Totals: 110 (A) 220 (B) Prevalence Index = B/A = 2.00 Hydrophytic Vegetation Indicators: 1 1 100 x2 - Dominance Test > 50% X 3 Prevalence Index = 8/A = 2.00 Hydrophytic Vegetation Indicator of hydrophytic Vegetation (Explain) Indicators of hydrophytic Vegetation (Explain) Indicator of hydrophytic Vegetation Y 3 Prevalence Index = 8/A = 2.00 (D) Hydrophytic Vegetation Indicators: 1 Facility ophytic Vegetation X 3 Prevalence Index = 3.0 (D)	Herb Stratum	(Plot size: <u>6 Ft</u>)						100.0%	(A/B
Image: Total Cover Total % Cover of: Multiply by: Vine Stratum Total % Cover of: Multiply by: PACW species 0 x1 = 0 FACW species 0 x1 = 0 FACW species 0 x1 = 0 FACU species 0 x4 = 0 UPL species 0 x5 = 0 Column Totals: 110 (A) 220 Hydrophylic Vegetation Indicators: 1 1 1 - 1 Rajd Test for Hydrophylic Vegetation (Explain) Indicators of tydic set and thinked problem must Expression unless disturbed or problematic Hydrophylic Vegetation (Explain) Indicators of tydic set and thinked problem must Expression unless disturbed or problematic Hydrophylic Vegetation (Explain) Indicators of tydic set and thinked problem must Expression unless disturbed or problematic Hydrophylic Vegetation (Explain) Indicators of tydic set and thinked problem must Expression unless disturbed or problematic Hydrophylic Vegetation (Explain) Indicators of tydic set and thinked problem work vines, approximately 20 total mest height and iss Approximately 20 total mest height and iss approximately 20 total (t is more in height and iss	Spartina patens			Y	FACW	Prevalence Index Wor	ksheet:		
OBL species 0 x1 = 0 FAC species 0 x3 = 0 FAC species 0 x4 = 0 FAC species 0 x4 = 0 FAC species 0 x4 = 0 UPL species 0 x4 = 0 Column Totals: 110 (A) 220 Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation X 2 Dominance Test > 50% X X 3 - Problematic Hydrophytic Vegetation (Explain) Indicators of Mydia soil and wellend hydrology must be present, unless disturbed or problematic. Definitions of Vegetation Tertals: Tree – Woody plants, excluding woody vines, approximately 20 th (6 m) or more in height and 3 in. (7.6 cm) DBH. Saping – Woody plants, excluding woody vines, approximately 30 th (6 m) or more in height and 18 in. (7.6 cm) DBH. Sapino – Woody plants, excluding woody vines, approximately 30 th (6 m) or more in height and 18 in. (7.6 cm) DBH. Sapino – Woody plants, excluding woody vines, approximately 30 th (6 m) or more in height and 18 in. (7.6 cm) DBH. Sapino – Woody plants, excluding woody vines, approximately 31 th (6 m) or more in height and 18 in. (7.6 cm) DBH. Shrub – Woody plants, excluding	N# 01 1		100	=Total Cover				ltiply by:	
FACW species 10 x 2 = 220 FAC species 0 x 3 = 0 FACU species 0 x 4 = 0 UPL species 0 x 5 = 0 Column Totals: 110 (A) 220 Prevalence Index = B/A 2.00 Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation X 2 - Dominance Test > 50% X 3 X 3 - Prevalence Index S 3.0	Vine Stratum								
FAC species 0 x 3 = 0 FACU species 0 x 4 = 0 UPL species 0 x 5 = 0 Column Totals: 110 (A) 220 (B) Prevalence Index = B/A= 2.00 Hydrophytic Vegetation Indicators: 1 Applic Species 0 x 5 = 0 Hydrophytic Vegetation Indicators: 1 1 Applic Species 3.0 1 Applic Vegetation (Explain) X 2 Dominance Test > 50% X 3 Prevalence Index > 3.0 1 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 1 h. (7.6 m) or larger in diameter at breast height (DBH). Saping – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in (7.6 m) or Bits, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in (7.6 m) or Bits, excluding woody vines, approximately 20 ft (6 m) in height. Herb – All herbaceous (non-woody) plants, includes woody plants, excluding woody vines, includes woody plants, excluding woody vines, approximately 20 ft (1 m) in height. Woody vine –						· · ·	110 x 2	= 220	
FACU species 0 x 4 = 0 UPL species 0 x 5 = 0 Column Totals: 110 (A) 220 (B) Provalence 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 3 in. (7.6 cm) DBH. Shrub - Woody plants, excluding woody vines, approximately 20 ft (1 to 6 m) in height. Herb - All herbaceous (non-woody) glants, including herbaceous (non-woody) vines, approximately 3 to 20 tt (1 to 6 m) in height. Herb - All woody vines, less than approximately 3 tt (1 m) in height. Woody vine - All woody vines, less than approximately 3 tt (1 m) in height. Woody vine - All woody vines, regardless of height. Woody vine - All woody vines, regardless of height.						-	0 x 3 :	= 0	
UPL species 0 x5 = 0 Column Totals: 110 (A) 220 (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 tt (6 m) or more in height and 3 in. (7.6 cm) of Hards in Height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 tt (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceus (non-woody) vines, regardless of height. Woody vine – All woody vines, regardless of height. Woody vine – All woody vines, regardless of height. <t< td=""><td></td><td></td><td></td><td></td><td></td><td>-</td><td>0 x 4 :</td><td>= 0</td><td></td></t<>						-	0 x 4 :	= 0	
Prevalence Index = B/A= 2.00 Hydrophylic Vegetation Indicators: 1 - Rapid Test for Hydrophylic Vegetation X 2 - Dominance Test > 50% X 3 - Prevalence Index ≤ 3.0 Problematic Hydrophylic 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 (1 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 20 ft (1 to 6 m) or more in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 tt (1 m) in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Woody vines, less than approximately 3 tt (1 m) in height. Horb- All woody vines, less than approximately 3 tt (1 m) in height. Hydrophytic Vegetation Present? Yes X No						•	0 x 5	= 0	
Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation X 2 - Dominance Test > 50% X 3 - Prevalence Index ≤ 3.0						Column Totals:	110 (A)	220	<u>(</u> B)
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 20 ft (6 m) or more in height. Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 to 20 ft (1 to 6 m) in height. Herb - All herbaceous vines, regardless of height. Woody vine - All woody vines, regardless of height. Woody vine - All woody vines, regardless of height.						Prevalence Index	= B/A=	2.00	
X 2 - Dominance Test > 50% X 3 - Prevalence Index ≤ 3.0						Hydrophytic Vegetation	Indicators		
X 3 - Prevalence Index ≤ 3.0						1 - Rapid Test for H	lydrophytic V	egetation	1
Problematic Hydrophytic Vegetation (Explain) Indicators of hydric soil and wetland hydrology must be present, unless dislurbed 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 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.						X 2 - Dominance Test	t > 50%	-	
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 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. Woody vine – All woody vines, regardless of height. Hydrophytic Yegetation Present? Yes _ X_ No						X 3 - Prevalence Inde	x ≤ 3.0		
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, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, less than approximately 3 ft (1 m) in height.						Problematic Hydrop	hytic Vegeta	ation (Ex	plain)
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. Woody vine – All woody vines, regardless of height. Hydrophytic Yes X									
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						Definitions of Vegetation	n Strata:		
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						approximately 20 ft (6 m)	or more in h	eight and	
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						approximately 20 ft (6 m)	excluding wo or more in h	ody vines eight and	, less
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									
Hydrophytic Vegetation Present? Yes X No						herbaceous vines, regard plants, except woody vine	less of size.	Includes	woody
Vegetation Present? Yes X No						Woody vine – All woody v	vines, regard	less of he	ight.
emarks: (Include photo numbers here or on a separate sheet.)							Yes X	No	
	emarks: (Include phote	o numbers here or on a separate she	eet.)						

Profile Descrip		depth nee	eded to document			onfirm	the absence of Indicators.)		
Depth	Matrix	0/	Color (moint)		Features	1002	Texture	Demortes	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	LOC 2	Texture	Remarks	
0 to 20	10YR 5/1	100					LOAMY SAND		
¹ Type: C=Conce	entration, D=Depletion,	RM=Redu	ced Martix, CS=Cc	overed or	Coated S	and Gra	ains. ² Location: PL=Pore Lini	ng, M=Matrix.	
Hydric Soil Indicators: Histosol (A1) Histosol (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)			 Polyvalue Below S Thin Dark Surface Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfa Depleted Dark Sur Redox Depression Marl (F10) (LRR L Depleted Ochric (F Iron-Manganese M Umbric Surface (F 	(S9) (LRI eral (F1) (trix (F2) 3) ce (F6) rface (F7) ns (F8) J) F11) (MLF Masses (F 13) (LRR	R S, T, U) (LRR O) RA 151) 12) (LRR O, P, T, U)		Indicators for Problematic Hydric Soils: 3 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outside MLRA 150A,B) Piedmont Floodplain Soils (F19) (LRR P, S, T) Anomalous Bright Loamy Soils (F20) (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) (LRR T, U) Other (Explain in Remarks) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
Sandy Redox Stripped Matri Dark Surface	(S5) ix (S6) (S7) (LRR P, S, T, U) e Layer (if observed]] [Delta Ochric (F17) Reduced Vertic (F Piedmont Floodpla Anomalous Bright	18) (MLR. ain Soils (I	A 150A, 150 F19) (MLRA	149A)	A, 153C, 153D) Hydric Soil Present?	Yes X No	
Remarks:									

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site:Orsted Wind, Ocean City Bridge	City/County: Ca	ape May C	ounty	Sampling Date:	03/21/2022	
Applicant/Owner:Ocean Wind, LLC		S	tate: NJ	Sampling Point:	SE-1-WLC	
Investigator(s): <u>Steve Seymour</u> , James Eberhard						
Landform (hillslope, terrace, etc.):Ievel					e (%): 0	
Subregion (LRR or MLRA): <u>S 149A</u> Lat:						
Soil Map Unit Name: <u>Appoquiniumink- Transquakin</u>						
Are climatic / hydrologic conditions on the site typical for this tin					/	
Are Vegetation, Soil, or Hydrology sign	ificantly disturbed?	Are "Normal (Circumstances" pr	resent? Yes	No	
Are Vegetation, Soil, or Hydrology natu	rally problematic?	(If needed, ex	kplain any answer	s in Remarks.)		
SUMMARY OF FINDINGS – Attach site map she	owing sampling poi	int locatio	ns, transects,	important fe	atures, etc.	
Hydrophytic Vegetation Present? Yes X No						
Hydric Soil Present? Yes X No	is the Sam	•	V			
Wetland Hydrology Present? Yes X No		letland?	Yes <u>X</u>	No	-	
Remarks:						
Portion of upland bulkhead. "Cable cross	sing area" signage in	n vicinity				
HYDROLOGY						
Wetland Hydrology Indicators:		5	Secondary Indicat	tors (minimum of	two required)	
Primary Indicators (minimum of one is required; check all that	apply)		Surface Soil C			
Surface Water (A1) Aquatic Fau		-	Sparsely Veg		Surface (B8)	
	its (B15) (LRR U)	-	Drainage Patterns (B10)			
	Sulfide Odor (C1)		Moss Trim Lir			
	hizospheres along Living F			Vater Table (C2)		
	f Reduced Iron (C4)		Crayfish Burro		(00)	
	Reduction in Tilled Soils		Saturation Visible on Aerial Imagery (C9)			
Algal Mat or Crust (B4) Thin Muck : Iron Deposits (B5) Other (Expl	lain in Remarks)	-	Geomorphic F			
Inundation Visible on Aerial Imagery (B7)		-	Shallow Aquitard (D3) FAC-Neutral Test (D5)			
Water-Stained Leaves (B9)		-	Sphagnum m	. ,	U)	
Field Observations:						
Surface Water Present? Yes NoX_ Depth	(inches):					
Water Table Present? Yes X No Depth						
Saturation Present? Yes X No Depth		Wetland Hy	drology Present	t? Yes X	No	
(includes capillary fringe)	-lubates and inclusion	(in the second s				
Describe Recorded Data (stream gauge, monitoring well, aeri	al photos, previous inspec	ctions), if avail	able:			
Remarks:						

VEGETATION (Four Strata) - Use scientific names of plants.

Sampling Point: SE-1-WL

22.4	Absolute	Dominan	t Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>30 ft</u>)	% Cover	<u>Species</u>	? <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: (B)
4				Percent of Dominant Species 100	
5				That Are OBL, FACW, or FAC: (A/B)
6				-	
7				Prevalence Index worksheet:	
8				Total % Cover of: Multiply by:	
	0	= Total Co	over	OBL species <u>90</u> x 1 = <u>90</u>	
50% of total cover:	20% c	of total cove	er:	FACW species x 2 =	
Sapling/Shrub Stratum (Plot size: 15 ft)				FAC species x 3 =	
1				FACU species x 4 =	
2				UPL species x 5 =	
				Column Totals: <u>90</u> (A) <u>90</u>	(B)
3				10	
4				Prevalence Index = B/A =1.0	
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	
		= Total Co	over	Problematic Hydrophytic Vegetation ¹ (Explain))
50% of total cover: 5 ft	20% c	of total cove	er:		
Herb Stratum (Plot size:)				¹ Indicators of hydric soil and wetland hydrology mu	ıst
1. Spartina alterniflora	20	<u>Y</u>	OBL	be present, unless disturbed or problematic.	
2. <u>Spartina patens</u>	70	<u>Y</u>	OBL	Definitions of Four Vegetation Strata:	
3				Tree – Woody plants, excluding vines, 3 in. (7.6 cm	a) or
4				more in diameter at breast height (DBH), regardles	
5				height.	
6				Sapling/Shrub – Woody plants, excluding vines, le	966
7				than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
8					
9				Herb – All herbaceous (non-woody) plants, regardl of size, and woody plants less than 3.28 ft tall.	less
10		<u> </u>		Woody vine – All woody vines greater than 3.28 ft	in
11	_			height.	
12	90				
		= Total Co			
50% of total cover:	20% c	of total cove	er:		
Woody Vine Stratum (Plot size: 30 ft)					
1					
2					
3					
4					
5				Hydrophytic	
	0	= Total Co	over		
50% of total cover:	20% c	- of total cove	er:	Vegetation X Present? Yes	
Remarks: (If observed, list morphological adaptations be					
······································	,.				

Depth	ription: (Describe Matrix	to the depth	n needed to docur			or confirr	n the absence	of indicators.)
(inches)	Color (moist)	%	Color (moist)	x Features	Type ¹	Loc ²	Texture	Remarks
0"-12"	4/1 10YR	100					fine sand	organic loam and clay
12"-20"	3/1 10YR	100					fine sand	loam and clay, trace sand
¹ Type: C=Cd Hydric Soil I Histosol Histic Ep Black Hi X Hydroge Stratified Organic 5 cm Mu Muck Pr 1 cm Mu Depleted Thick Da Coast Pr	Dincentration, D=Dep ndicators: (Applid (A1) ipedon (A2) stic (A3) in Sulfide (A4) I Layers (A5) Bodies (A6) (LRR F cky Mineral (A7) (L esence (A8) (LRR I ck (A9) (LRR P, T) I Below Dark Surface rk Surface (A12) airie Redox (A16) (P, T, U) RR P, T, U) J) ce (A11) MLRA 150A)	RRs, unless other Polyvalue Be Thin Dark Su Loamy Muck Loamy Gleye X Depleted Ma Redox Dark Depleted Da Redox Depre Marl (F10) (L Depleted Oc Iron-Mangan Umbric Surfa	wise note low Surfac rface (S9) y Mineral (ed Matrix (F trix (F3) Surface (F6 k Surface essions (F8 RR U) nric (F11) (ese Masse ce (F13) (I	d.) e (S8) (L (LRR S, F1) (LRR 2) 6) (F7)) MLRA 1 ; s (F12) (.RR P, T	RR S, T, I T, U) O) 51) LRR O, P	² Location: Indicators U)1 cm M 2 cm M 2 cm M Reduc Piedma Reduc Red Pa Red Pa Red Pa Very S Other (PL=Pore Lining, M=Matrix. for Problematic Hydric Soils ³ : Muck (A9) (LRR O) Muck (A10) (LRR S) ed Vertic (F18) (outside MLRA 150A, B) ont Floodplain Soils (F19) (LRR P, S, T) alous Bright Loamy Soils (F20) RA 153B) arent Material (TF2) shallow Dark Surface (TF12) (Explain in Remarks) eators of hydrophytic vegetation and land hydrology must be present,
	lucky Mineral (S1) (Delta Ochric			, 0,		ess disturbed or problematic.
Sandy G	leyed Matrix (S4)		Reduced Ver			•		
	edox (S5)		Piedmont Flo					452D)
	Matrix (S6) face (S7) (LRR P, 3	S. T. U)		ngni Loan	iy Solis (i	-20) (IVI L F	RA 149A, 153C	, 1550)
	ayer (if observed)	:						
Туре:		none	observed					N.
Depth (inc	hes):						Hydric Soil	Present? Yes X No
	0-12" are orga trace sand, sat		and clay with p	blant roo	ts; 12"	-20" are	e loam and o	clay

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site:Orsted Wind-Ocean City Bridge	City/County: C	Cape May Cour	nty San	mpling Date: _	03/21/2022
Applicant/Owner: Ocean Wind, LLC		State: _			SE-UPLC
Investigator(s): <u>Steve Seymour, James Eherhardt</u>	Section, Township	o, Range: <u>Ocea</u>			
Landform (hillslope, terrace, etc.): hillslope		ive, convex, none):		Slope	e (%):0
Subregion (LRR or MLRA): <u>S149A</u> Lat: <u>39.2</u>	252505	Long:74	1.627138	Date	um: WGS84
Soil Map Unit Name: <u>Orhan Land psamments</u>		N	WI classification	n: <u>none</u>	
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes <u>X</u> M	No (If no, e	explain in Remai	rks.)	
Are Vegetation, Soil, or Hydrology significantly	v disturbed?	Are "Normal Circun	nstances" prese	ent? Yes X	No
Are Vegetation, Soil, or Hydrology naturally pr	oblematic?	(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 X Yes No X Yes No X	 Is the Sampled Area within a Wetland? 	Yes NoX
Remarks:		·	

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; chec	ck all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Aq	uatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Ma	arl Deposits (B15) (LRR U)	Drainage Patterns (B10)
Saturation (A3) Hy	drogen Sulfide Odor (C1)	Moss Trim Lines (B16)
Water Marks (B1) Ox	idized Rhizospheres along Living Roots (C3)	Dry-Season Water Table (C2)
Sediment Deposits (B2) Pre	esence of Reduced Iron (C4)	Crayfish Burrows (C8)
Drift Deposits (B3) Re	ecent Iron Reduction in Tilled Soils (C6)	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Thi	in Muck Surface (C7)	Geomorphic Position (D2)
Iron Deposits (B5) Oth	her (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):	
X	Death (inclusion)	
Saturation Present? Yes No X	_ Depth (inches): Wetland	Hydrology Present? Yes NoX
(includes capillary fringe)		
(includes capillary fringe)		
(includes capillary fringe)		
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring v		
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring v		
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring v		
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring v		
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring v		
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring v		
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring v		
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring v		
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring v		
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring v		
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring v		

VEGETATION (Four Strata) - Use scientific names of plants.

00.4			nt Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u>)			<u>? Status</u>	Number of Dominant Species
1. Prunus serotina	<u> 10 </u>	Υ	<u>FACU</u>	That Are OBL, FACW, or FAC: (A)
2				
3				Total Number of Dominant 4 (B)
4				Percent of Dominant Species 25
5				That Are OBL, FACW, or FAC: (A/B)
6				
7				Prevalence Index worksheet:
8				Total % Cover of:Multiply by:
	10			OBL species x 1 =
				FACW species x 2 =
50% of total cover:	20% o	f total cove	er:	FAC species 60 x 3 = 180
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft</u>)				
1. Toxicodendron radicans	60	Y	FAC	FACU species x 4 =240
2				UPL species x 5 =
				Column Totals: <u>120</u> (A) <u>420</u> (B)
3				2.5
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
		= Total Co		Problematic Hydrophytic Vegetation ¹ (Explain)
50% of total cover:	20% o	f total cove	er:	
Herb Stratum (Plot size: <u>5 ft</u>)				¹ Indicators of hydric soil and wetland hydrology must
1. Artemisia annua	30	Y	FACU	be present, unless disturbed or problematic.
		-		Definitions of Four Vegetation Strata:
2				Deminions 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.
6				Sapling/Shrub – Woody plants, excluding vines, less
				than 3 in. DBH and greater than 3.28 ft (1 m) tall.
7				
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.				
· · · ·	30	= Total Co		
50% of total cover:	20% o	t total cove	er:	
Woody Vine Stratum (Plot size: <u>30 ft</u>)				
1. Parthenocissus quinquefolia	20	Y	FACU	
2				
3				
4				
5				Hydrophytic
	20	= Total Co	over	Vegetation
50% of total cover:	20% oʻ	f total cove	er:	Present? Yes <u>No X</u>
Remarks: (If observed, list morphological adaptations be				
	OW).			
Poison Ivy growing in shrub forn	n 10-13 ft	high.		
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		5		

Depth	Matrix		Redox Fe	atures				
(inches)	Color (moist)	%		<u>% Type¹</u>	Loc ²	Texture	Rema	arks
0"-11"	3/3 10YR						dry, 20% rour	nd pebbles
11"-20"	4/3 10YR						dry silty loam	
¹ Type: C=Co	ncentration, D=Depl	etion, RM=Re	educed Matrix, MS=M	asked Sand Gra	uns.	² Location:	PL=Pore Lining, M=	=Matrix.
Hydric Soil I	ndicators: (Applica	able to all LR	Rs, unless otherwis	e noted.)		Indicators	for Problematic Hy	/dric Soils³:
Histosol (. ,		Polyvalue Below	. , .			/luck (A9) (LRR O)	
	ipedon (A2)		Thin Dark Surfac				Muck (A10) (LRR S)	
Black His	stic (A3) n Sulfide (A4)		Loamy Mucky Mi Loamy Cloved M		0)		ed Vertic (F18) (out s	
	Layers (A5)		Loamy Gleyed M Depleted Matrix (ont Floodplain Soils alous Bright Loamy ६	
	Bodies (A6) (LRR P,	T, U)	Redox Dark Surfa				RA 153B)	5013 (1 20)
	cky Mineral (A7) (LF		Depleted Dark Si	urface (F7)		Red Pa	arent Material (TF2)	
Muck Pre	esence (A8) (LRR U) .	Redox Depression	· · ·			hallow Dark Surface	
	ck (A9) (LRR P, T)		Marl (F10) (LRR			Other	(Explain in Remarks)
	Below Dark Surface	e (A11)	Depleted Ochric			T) ³ ladia	otoro of hydrophytic	vegetation and
	rk Surface (A12) airie Redox (A16) (N	U RA 150A)	Iron-Manganese Umbric Surface (,	ators of hydrophytic and hydrology must	-
	ucky Mineral (S1) (L		Delta Ochric (F17		0,		ess disturbed or prot	
	leyed Matrix (S4)		Reduced Vertic (DA, 150B)			
	edox (S5)	,	Piedmont Floodp	lain Soils (F19) ((MLRA 149	BA)		
Stripped	Matrix (S6)		Anomalous Brigh	t Loamy Soils (F	20) (MLR/	A 149A, 153C	, 153D)	
	face (S7) (LRR P, S							
Restrictive L	face (S7) (LRR P, S ayer (if observed):		oserved					
Restrictive L Type:	ayer (if observed):		oserved			Hydria Sail	Procent? Vec	No. X
Restrictive L Type: Depth (inc	ayer (if observed):		oserved 			Hydric Soil	Present? Yes	<u>No X</u>
Restrictive L Type: Depth (inc	ayer (if observed):		oserved 			Hydric Soil	Present? Yes _	<u>No X</u>
Restrictive L Type: Depth (inc	ayer (if observed):		oserved 			Hydric Soil	Present? Yes	<u>No X</u>
Restrictive L Type: Depth (inc Remarks:	ayer (if observed): hes):	none ob	_		atland er	I	Present? Yes _	<u>No X</u>
Restrictive L Type: Depth (inc Remarks:	ayer (if observed): hes):	none ob	oserved 	contour to we	etland ed	I	Present? Yes	<u>No X</u>
Restrictive L Type: Depth (inc Remarks:	ayer (if observed): hes):	none ob	_	contour to we	etland ed	I	Present? Yes	<u>No X</u>
Restrictive L Type: Depth (inc Remarks:	ayer (if observed): hes):	none ob	_	contour to we	etland ec	I	Present? Yes _	<u>No_X</u>
Restrictive L Type: Depth (inc Remarks:	ayer (if observed): hes):	none ob	_	contour to we	etland ec	I	Present? Yes _	<u>No X</u>
Restrictive L Type: Depth (inc Remarks:	ayer (if observed): hes):	none ob	_	contour to we	etland eo	I	Present? Yes	<u>No X</u>
Restrictive L Type: Depth (inc Remarks:	ayer (if observed): hes):	none ob	_	contour to we	etland eo	I	Present? Yes	<u>No X</u>
Restrictive L Type: Depth (inc Remarks:	ayer (if observed): hes):	none ob	_	contour to we	etland eo	I	Present? Yes	<u>No X</u>
Restrictive L Type: Depth (inc Remarks:	ayer (if observed): hes):	none ob	_	contour to we	etland eo	I	Present? Yes _	<u>No X</u>
Restrictive L Type: Depth (inc Remarks:	ayer (if observed): hes):	none ob	_	contour to we	etland eo	I	Present? Yes	<u>No X</u>
Restrictive L Type: Depth (inc Remarks:	ayer (if observed): hes):	none ob	_	contour to we	etland eo	I	Present? Yes	<u>No X</u>
Restrictive L Type: Depth (inc Remarks:	ayer (if observed): hes):	none ob	_	contour to we	etland eo	I	Present? Yes	<u>No X</u>
Restrictive L Type: Depth (inc Remarks:	ayer (if observed): hes):	none ob	_	contour to we	etland eo	I	Present? Yes	<u>No X</u>
Restrictive L Type: Depth (inc Remarks:	ayer (if observed): hes):	none ob	_	contour to we	etland eo	I	Present? Yes	<u>No X</u>
Restrictive L Type: Depth (inc Remarks:	ayer (if observed): hes):	none ob	_	contour to we	etland eo	I	Present? Yes _	<u>No X</u>
Restrictive L Type: Depth (inc Remarks:	ayer (if observed): hes):	none ob	_	contour to we	etland eo	I	Present? Yes _	<u>No X</u>
Restrictive L Type: Depth (inc Remarks:	ayer (if observed): hes):	none ob	_	contour to we	etland eo	I	Present? Yes	<u>No X</u>
Restrictive L Type: Depth (inc Remarks:	ayer (if observed): hes):	none ob	_	contour to we	etland eo	I	Present? Yes	<u>No X</u>
Restrictive L Type: Depth (inc Remarks:	ayer (if observed): hes):	none ob	_	contour to we	etland eo	I	Present? Yes	<u>No X</u>
Restrictive L Type: Depth (inc Remarks:	ayer (if observed): hes):	none ob	_	contour to we	etland eo	I	Present? Yes _	<u>No X</u>

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Orsted Wind-Ocean City Bridge	City/County: C	ape May County	/ Sampling Date:	03/21/2022
Applicant/Owner: Ocean Wind, LLC	onj.county	State:		
Investigator(s): Steve Seymour, James Eberhar	dt or t			
		-	hip of Upper	
Landform (hillslope, terrace, etc.): level				
Subregion (LRR or MLRA): <u>S 149A</u>	at: 39.253431	Long:7	4.630918 Da	atum: <u>WGS84</u>
Soil Map Unit Name: Appoquiniumink- Transquak	ing- Mrspillion	NW	I classification: <u>E2EM</u>	1Pd
Are climatic / hydrologic conditions on the site typical for thi	s time of year? Yes X	No (If no, ex	plain in Remarks.)	
Are Vegetation, Soil, or Hydrologys	significantly disturbed?	Are "Normal Circums	tances" present? Yes	X _{No}
Are Vegetation, Soil, or Hydrology r			ny answers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map	showing sampling po	int locations, tra	insects, important f	eatures, etc.
Hudronhutio Vegetetion Breezent?				
Hydrophytic Vegetation Present? Yes X N Hydric Soil Present? Yes X N			V	
Wetland Hydrology Present? Yes X N		/etland?	res X No	-
Remarks:				
fiddler crabs present				
HYDROLOGY				
Wetland Hydrology Indicators:		Seconda	ary Indicators (minimum o	of two required)
Primary Indicators (minimum of one is required; check all	that apply)	Sur	face Soil Cracks (B6)	
X Surface Water (A1) X Aquatic	Fauna (B13)	Spa	arsely Vegetated Concave	Surface (B8)
X High Water Table (A2) Marl De	posits (B15) (LRR U)	Dra	inage Patterns (B10)	
X Saturation (A3) X Hydroge	en Sulfide Odor (C1)	Mos	ss Trim Lines (B16)	
Water Marks (B1) Oxidize	d Rhizospheres along Living I	Roots (C3) Dry	-Season Water Table (C2)
	ce of Reduced Iron (C4)	Cra	yfish Burrows (C8)	
	Iron Reduction in Tilled Soils		uration Visible on Aerial Ir	magery (C9)
	ick Surface (C7)		omorphic Position (D2)	
	Explain in Remarks)		allow Aquitard (D3)	
Inundation Visible on Aerial Imagery (B7) X Water-Stained Leaves (B9)			C-Neutral Test (D5)	- 10
Field Observations:		Spi	agnum moss (D8) (LRR *	1, 0)
Surface Water Present? Yes X No De	nth (inches): to surface			
	pth (inches): to surface			
Saturation Present? Yes X No De	pth (inches): to surface	Wetland Hydrolog	y Present? Yes X	No
(includes capillary fringe)				
Describe Recorded Data (stream gauge, monitoring well,	aerial photos, previous inspec	ctions), if available:		
Remarks:				

VEGETATION (Four Strata) - Use scientific names of plants.

Sampling Point: _____

20.4	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u>)	<u>% Cover</u>	Species?	<u>Status</u>	Number of Dominant Species
1				That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata: 2 (B)
4				
5				Percent of Dominant Species 100
				That Are OBL, FACW, or FAC: (A/B)
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
8				OBL species <u>60</u> x 1 = <u>60</u>
		= Total Co		FACW species 30 x 2 = 60
50% of total cover:	20% o	f total cove	:	FAC species x 3 =
Sapling/Shrub Stratum (Plot size: 15 ft)				
1				FACU species x 4 =
2				UPL species x 5 =
3				Column Totals: <u>90</u> (A) <u>120</u> (B)
4				Prevalence Index = B/A =1.33
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
		= Total Co		Problematic Hydrophytic Vegetation ¹ (Explain)
50% of total cover:	20% o	f total cove	:	
Herb Stratum (Plot size: <u>5 ft</u>)				¹ Indicators of hydric soil and wetland hydrology must
1. Phragmites australis	30	Y	FACW	be present, unless disturbed or problematic.
2. <u>Spartina alterniflora</u>	50	Y	<u>OBL</u>	Definitions of Four Vegetation Strata:
3. <u>Spartina patens</u>	10	Ν	OBL	
4				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
5				height.
6				Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
7				
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				
	90	= Total Co	ver	
50% of total cover:	20% o	f total cove	:	
Woody Vine Stratum (Plot size: 30 ft)				
1				
2				
3				
4				
5				Hydrophytic
		= Total Co		Vegetation Present? Yes X No
50% of total cover:		f total cover	:	
Remarks: (If observed, list morphological adaptations bel	ow).			

Depth (inches)	<u>Matrix</u> Color (moist)		Redox Features <u>Color (moist) % Type¹ Loc²</u>	Texture	Remarks
0"-6"	2/1 10YR	<u>%</u>			organic, muck/peat
6"-20"	6/1 10YR	100			pure sand, grains coated
	0/110111	_ 100			pare cana, granie coatea
1 <u></u>				21	DI - Dave Lisie e. M-M-Metric
			Reduced Matrix, MS=Masked Sand Grains. RRs, unless otherwise noted.)		PL=Pore Lining, M=Matrix. for Problematic Hydric Soils ³ :
Histosol			Polyvalue Below Surface (S8) (LRR S,		Muck (A9) (LRR O)
	pipedon (A2)		Thin Dark Surface (S9) (LRR S, T, U)	· · <u> </u>	Muck (A10) (LRR S)
	istic (A3)		Loamy Mucky Mineral (F1) (LRR O)		ed Vertic (F18) (outside MLRA 150A,B)
X Hydroge	en Sulfide (A4)		Loamy Gleyed Matrix (F2)	Piedm	ont Floodplain Soils (F19) (LRR P, S, T)
Stratified	d Layers (A5)		Depleted Matrix (F3)	Anom	alous Bright Loamy Soils (F20)
	Bodies (A6) (LRR		Redox Dark Surface (F6)	•	RA 153B)
	ucky Mineral (A7) (Depleted Dark Surface (F7)		arent Material (TF2)
	esence (A8) (LRR	,	Redox Depressions (F8)		Shallow Dark Surface (TF12)
	Jok (A9) (LRR P, T		Mari (F10) (LRR U)	Other	(Explain in Remarks)
	d Below Dark Surfa ark Surface (A12)	ace (ATT)	 Depleted Ochric (F11) (MLRA 151) Iron-Manganese Masses (F12) (LRR O, 	PT) ³ Indi	cators of hydrophytic vegetation and
	rairie Redox (A16)	(MLRA 150A)			tland hydrology must be present.
	/lucky Mineral (S1)		Delta Ochric (F17) (MLRA 151)		ess disturbed or problematic.
	Gleyed Matrix (S4)	. , ,	Reduced Vertic (F18) (MLRA 150A, 150		·
	Redox (S5)		Piedmont Floodplain Soils (F19) (MLRA		
Stripped	l Matrix (S6)		Anomalous Bright Loamy Soils (F20) (M	ILRA 149A, 153C	, 153D)
	rface (S7) (LRR P				
Restrictive	Layer (if observe	d):			
Туре:			_		
Depth (in	ches):		<u> </u>	Hydric Soil	Present? Yes X No
Remarks:					
Iv	11 (
SUD	soil is rounded	d, coarse qu	uartz sand grains, coated with orga	anic layer	

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

WEILAND DETERMINATION DATA FORM	n – Atlantic and Guir Coastal Plain Region
Project/Site: Orsted Wind- Ocean City Bridge City/Co	ounty: Cape May County Sampling Date: 03/21/2022
Applicant/Owner: <u>Orsted Wind, LLC</u>	State: <u>NJ</u> Sampling Point: <u>SW-UPLA</u>
Investigator(s): <u>Steve Seymour, James Eberhardt</u> Section	
Landform (hillslope, terrace, etc.): hillslope Local	relief (concave, convex, none): NONE Slope (%):
Subregion (LRR or MLRA):S149A Lat:39.253	
	NWI classification: NONE
Are climatic / hydrologic conditions on the site typical for this time of year? Ye	
Are Vegetation, Soil, or Hydrology significantly disturb	
Are vegetation, Soil, or Hydrology significantly distant	
SUMMARY OF FINDINGS – Attach site map showing sam	pling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No _X Hydric Soil Present? Yes No _X Wetland Hydrology Present? Yes No _X	Is the Sampled Area within a Wetland? Yes NoX
Remarks:	
piles of old concrete fill in the area	
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
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	
Sediment Deposits (B2) Presence of Reduced Iror	
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) 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):	
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, prev	vious inspections), if available:
Remarks:	
Area may have been historically filled. Area elev	/ated 3-4ft nearby tidal marsh.

VEGETATION (Four Strata) - Use scientific names of plants.

20#	Absolute Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:30ft)	<u>% Cover Species?</u> Status	Number of Dominant Species
1. Juniperus virginiana	<u>70 Y FACU</u>	That Are OBL, FACW, or FAC: (A)
2		Total Number of Dominant
3		Species Across All Strata:(B)
4		· · · · · · · · · · · · · · · · · · ·
5		Percent of Dominant Species 0
6		That Are OBL, FACW, or FAC: (A/B)
		Prevalence Index worksheet:
7		Total % Cover of:Multiply by:
8	70	OBL species x 1 =
	<u>70</u> = Total Cover	FACW species x 2 =
	20% of total cover:	FAC species x 3 =
Sapling/Shrub Stratum (Plot size: 15ft)		FACU species $85 \times 4 = 340$
1		
2		UPL species x 5 = Column Totals: 85 (A) 340 (B)
3		Column Totals: <u>85</u> (A) <u>340</u> (B)
4		Prevalence Index = B/A =
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
	0 = Total Cover	Problematic Hydrophytic Vegetation ¹ (Explain)
Fft	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
5.		height.
6		Septing/Shrub Weedy pleate evoluting vince loss
		Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
7		
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		
	0 = Total Cover	
50% of total cover:	20% of total cover:	
Woody Vine Stratum (Plot size: <u>30ft</u>)		
1. Lonicera japonica	15 Y FACU	
2.		
3		
4		
5		Hydrophytic Versetation
	<u>15</u> = Total Cover	Vegetation Present? Yes <u>No X</u>
50% of total cover:	20% of total cover:	
Remarks: (If observed, list morphological adaptations bel	ow).	

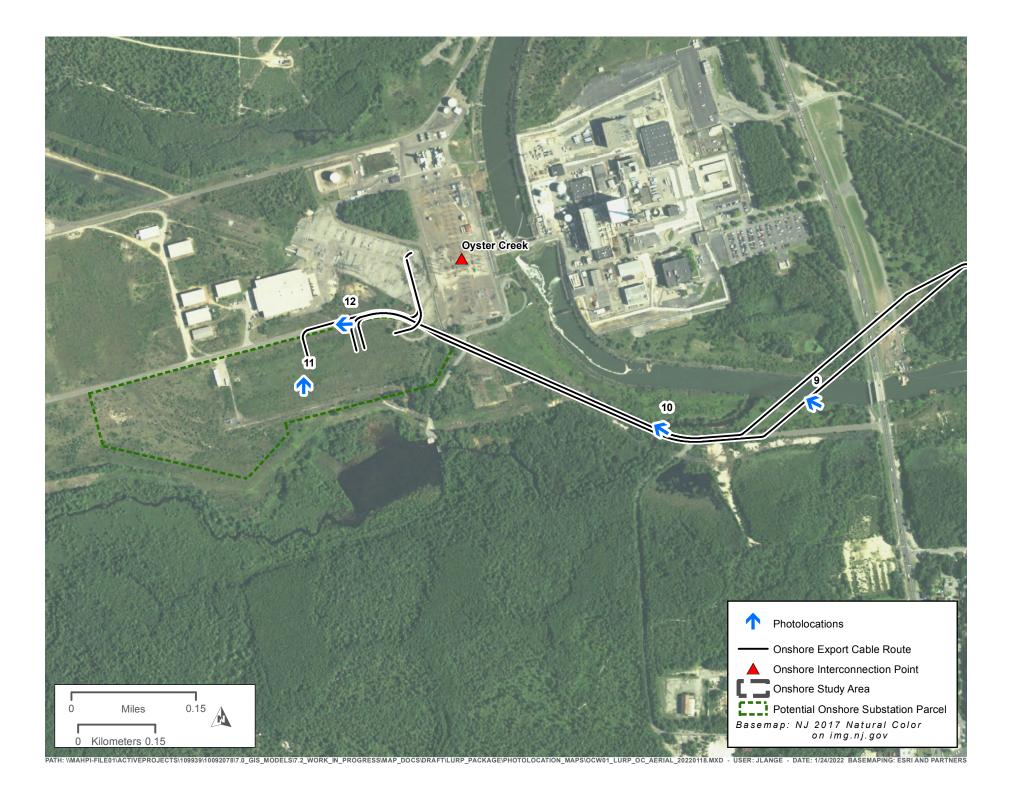
	windlesse (Describe	4 - 4 4 4 -				Sampling Point:
Depth	ription: (Describe Matrix	to the depth	needed to document the indicator on Redox Features	or confirm th	ie absence	of indicators.)
(inches)	Color (moist)	%	Color (moist) % Type ¹	Loc ²	Texture	Remarks
0"-20"	3/3 10YR	100				silty loam with 5% gravel, dry
					2	
			educed Matrix, MS=Masked Sand Gra Rs, unless otherwise noted.)	iins.		PL=Pore Lining, M=Matrix. for Problematic Hydric Soils ³ :
Histosol			Polyvalue Below Surface (S8) (LI			Muck (A9) (LRR O)
	pipedon (A2)		Thin Dark Surface (S9) (LRR S,			Muck (A10) (LRR S)
	stic (A3) en Sulfide (A4)		Loamy Mucky Mineral (F1) (LRR Loamy Gleyed Matrix (F2)	0)		ed Vertic (F18) (outside MLRA 150A,B)
	d Layers (A5)		Depleted Matrix (F3)			ont Floodplain Soils (F19) (LRR P, S, T) alous Bright Loamy Soils (F20)
	Bodies (A6) (LRR P	, T, U)	Redox Dark Surface (F6)			RA 153B)
	icky Mineral (A7) (Ll		Depleted Dark Surface (F7)		Red P	arent Material (TF2)
	esence (A8) (LRR L	I)	Redox Depressions (F8)			Shallow Dark Surface (TF12)
	ick (A9) (LRR P, T)	- (444)	Mari (F10) (LRR U)		Other	(Explain in Remarks)
	d Below Dark Surfac ark Surface (A12)	e (ATT)	Depleted Ochric (F11) (MLRA 15 Iron-Manganese Masses (F12) (L		³ Indic	cators of hydrophytic vegetation and
	rairie Redox (A16) (I	VILRA 150A)	Umbric Surface (F13) (LRR P, T,			land hydrology must be present,
Sandy N	lucky Mineral (S1) (I	LRR O, S)	Delta Ochric (F17) (MLRA 151)		unl	ess disturbed or problematic.
	Bleyed Matrix (S4)		Reduced Vertic (F18) (MLRA 150			
	Redox (S5)		Piedmont Floodplain Soils (F19) (-	-	4520)
	l Matrix (S6) rface (S7) (LRR P, \$	ат II)	Anomalous Bright Loamy Soils (F	·20) (NILKA 1	149A, 153C	, 1530)
	Layer (if observed)		sorved			
Туре:		none or				
Depth (in	ches):		_		Hydric Soil	Present? Yes <u>No X</u>
Remarks:				I		
	Live trees all re	d cedar; 3	-12" DBH, some dead huckl	eberry. No	o shrub l	aver.
		, -	,	, ,		



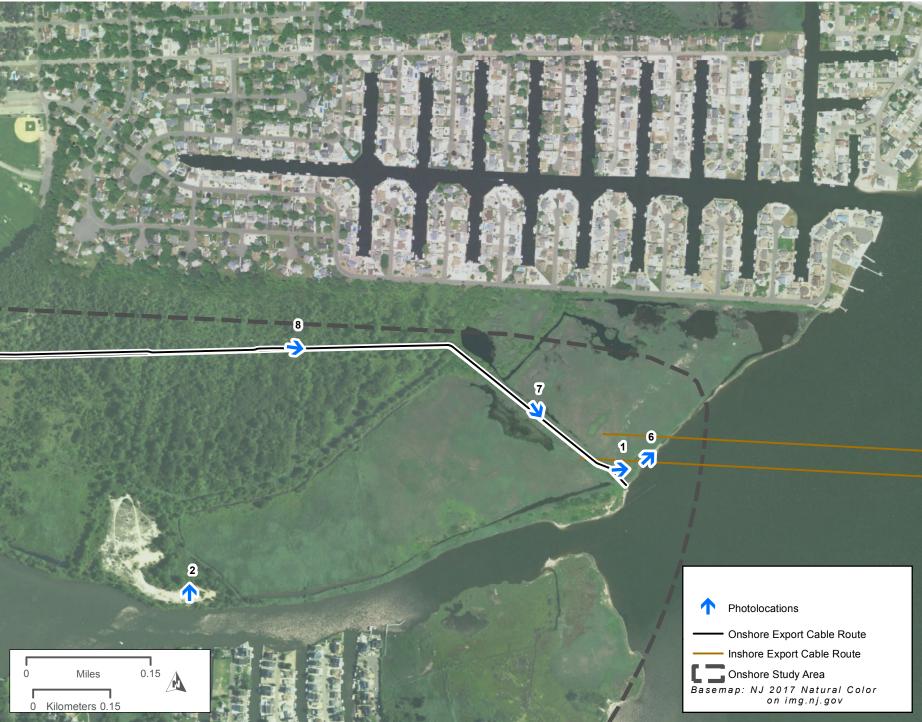
Photologs



Oyster Creek







PATH: \IMAHPIFILe01ACTIVEPROJECTS\109939\10092078\7.0_GIS_MODELS\7.2_WORK_IN_PROGRESSMAP_DOCS\DRAFT\LURP_PACKAGE\PHOTOLOCATION_MAPS\0CW01_LURP_0C_AERIAL_20220118.MXD - USER: JLANGE - DATE: 1/24/2022 BASEMAPING: ESRI AND PARTNERS



PATH: \IMAHPI-FILE01\ACTIVEPROJECTS\109939\10092078\7.0_GIS_MODELS\7.2_WORK_IN_PROGRESSIMAP_DOCS\DRAFT\LURP_PACKAGE\PHOTOLOCATION_MAPS\0CW01_LURP_0C_AERIAL_20220118.MXD - USER: JLANGE - DATE: 1/24/2022 BASEMAPING: ESRI AND PARTNERS



Photo 1: View facing east toward Barnegat Bay from delineated coastal wetlands



Photo 2: View facing north, upland of wetland area delineated along Oyster Creek.

	Ocean Wind Offshore Windfarm Photograph Log: Ovster Creek Export Cable Route	DATE:	11/18/21	РНОТО
Ocean Wind Offshore Windfarm		CREATED BY:	DV	
		REVIEWED BY:	DB	1 and 2
		JOB NO:	10092078	

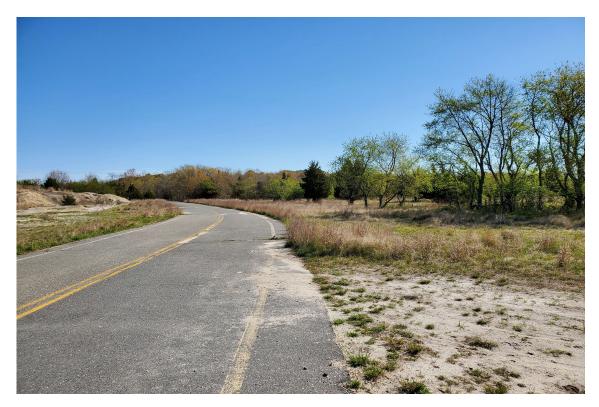


Photo 3: Main access road coming to the Holtec Farm Property in Lacey Township, proposed export cable alignment on right.



Photo 4: Photos taken viewing south from Holtec Farm Property access road in the general direction of the proposed export cable alignment

		DATE:	11/18/21	рното
Ocean Wind Offshore Windfarm	Photograph Log: Oyster Creek Export Cable Route	CREATED BY:	DV	
	Photograph Log. Oyster creek Export Cable Route	REVIEWED BY:	DB	3 and 4
		JOB NO:	10092078	



Photo 5: Dirt access road on Holtec Farm Property, proposed cable alignment. Project may require widening and clearing in areas.



Photo 6: Photo facing north at the approximate area of HDD cable landfall at the Holtec Farm Property along Barnegat Bay shoreline near the mouth of Oyster Creek.

		DATE:	11/18/21	рното
Ocean Wind Offshore Windfarm	Photograph Log: Oyster Creek Export Cable Route	CREATED BY:	DV	
	Photograph Log. Oyster Creek Export Cable Route	REVIEWED BY:	DB	5 and 6
		JOB NO:	10092078	



Photo 7: Picture viewing southeast torward Barnegat Bay within the area of the proposed export cable alignment, delineated coastal wetlands on both sides.



Photo 8: Viewing east along proposed export cable route within dirt trail on Holtec Farm Property; delineated freshwater wetlands on either side of path

		DATE:	11/18/21	рното
Ocean Wind Offshore Windfarm	Photograph Log: Oyster Creek Export Cable Route	CREATED BY:	DV	
Ocean wind Onshore Windlam	Photograph Log. Oyster creek Export Cable Route	REVIEWED BY:	DB	9 and 10
		JOB NO:	10092078	



Photo 9: Picture viewing northwest in the area of the proposed HDD crossing of Oyster Creek, delineated wetlands on left.



Photo 10: Viewing west along the access road to the Oyster Creek proposed onshore substation.

Ocean Wind Offshore Windfarm

Photograph Log: Oyster Creek Export Cable Rou

	-			
e Route	DATE:	11/18/21	РНОТО	
	CREATED BY:	DV		
	REVIEWED BY:	DB	9 and 10	
	JOB NO:	10092078		



Photo 11: Picture viewing north of proposed substation area at Oyster Creek.



Photo 12: Viewing west along the access road to the Oyster Creek proposed onshore substation. Substation area on left.

		DATE:	11/18/21	PHOTO
Ocean Wind Offshore Windfarm	Photograph Log: Oyster Creek Export Cable Route	CREATED BY:	DV	
Ocean Wind Onshore Windlam	Photograph Log. Oyster creek Export Cable Route	REVIEWED BY:	DB	11 and 12
		JOB NO:	10092078	



Photo 13: Viewing northwest at the proposed transition joint bay area at HDD landfall at Island Beach State Park



Photo 14: Viewing south at Island Beach State Park Swimming Area 2 parking lot in the proposed area of export cable alignment.

		DATE:	11/18/21	рното
Ocean Wind Offshore Windfarm	Photograph Log: Oustor Crook Export Cable Boute	CREATED BY:	DV	
	Photograph Log: Oyster Creek Export Cable Route	REVIEWED BY:	DB	13 and 14
		JOB NO:	10092078	



Photo 15: Viewing northeast in the proposed joint bay area of the Island Beach State Park maintenance/storage yard



Photo 16: Viewing east in the proposed joint bay area of the Island Beach State Park maintenance/storage yard

		DATE:	11/18/21	рното
Ocean Wind Offshore Windfarm	Photograph Log: Oyster Creek Export Cable Route	CREATED BY:	DV	
	Photograph Log. Oyster creek Export Cable Route	REVIEWED BY:	DB	15 and 16
		JOB NO:	10092078	



Photo 17: Viewing west at the area of the proposed open cut cable landfall along the western shoreline of Island Beach State Park in the area of the historic channel



Photo 18: Viewing east at the western shoreline of Island Beach State Park from the historic channel.

		DATE:	11/18/21	рното
Ocean Wind Offshore Windfarm	Bhotograph Logi Ovator Crook Export Cable Boute	CREATED BY:	DV	
Ocean Wind Onshore Windlarm	Photograph Log: Oyster Creek Export Cable Route	REVIEWED BY:	DB	17 and 18
		JOB NO:	10092078	

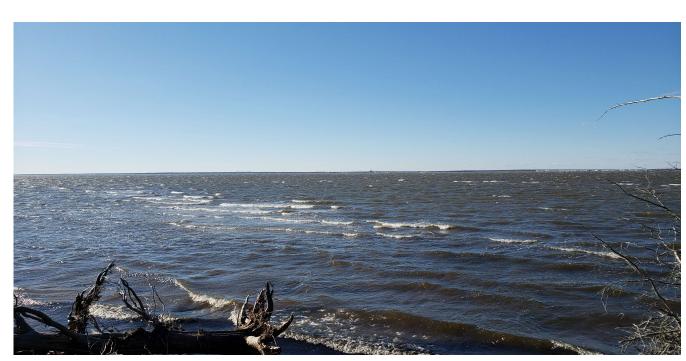


Photo 19: Viewing west into Barnegat Bay from Island Beach State Park at the proposed export cable route.



Photo 20: Viewing west into Barnegat Bay from Island Beach State Park at the proposed export cable route.

Ocean Wind Offshore Windfarm

Photograph Log: Oyster Creek Export Cable Route

DATE:	11/18/21	РНОТО
CREATED BY:	DV	
REVIEWED BY:	DB	19 and 20
JOB NO:	10092078	

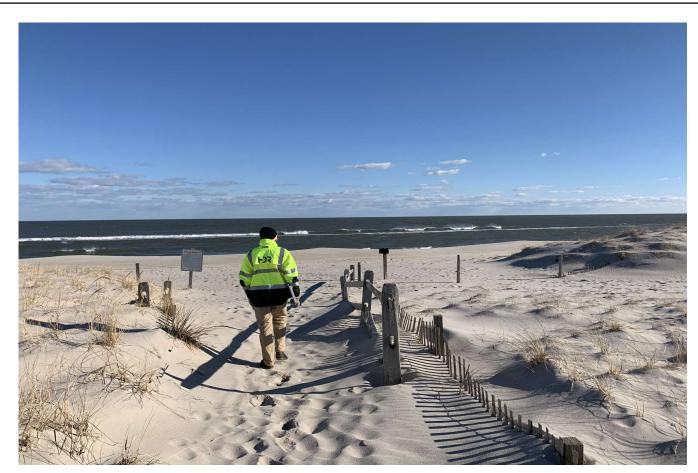


Photo 21: Viewing east at Atlantic Ocean from Island Beach State Park dune beach access path, area of HDD exit pit in the distance



Photo 22: Viewing east down the beach access path through dunes from the southern auxiliary lot at Island Beach State Park Swimming Area 2

Ocean Wind Offshore Windfarm

Photograph Log: Oyster Creek Export Cable Route

DATE:	11/18/21	РНОТО
CREATED BY:	DV	
REVIEWED BY:	DB	21 and 22
JOB NO:	10092078	



BL England



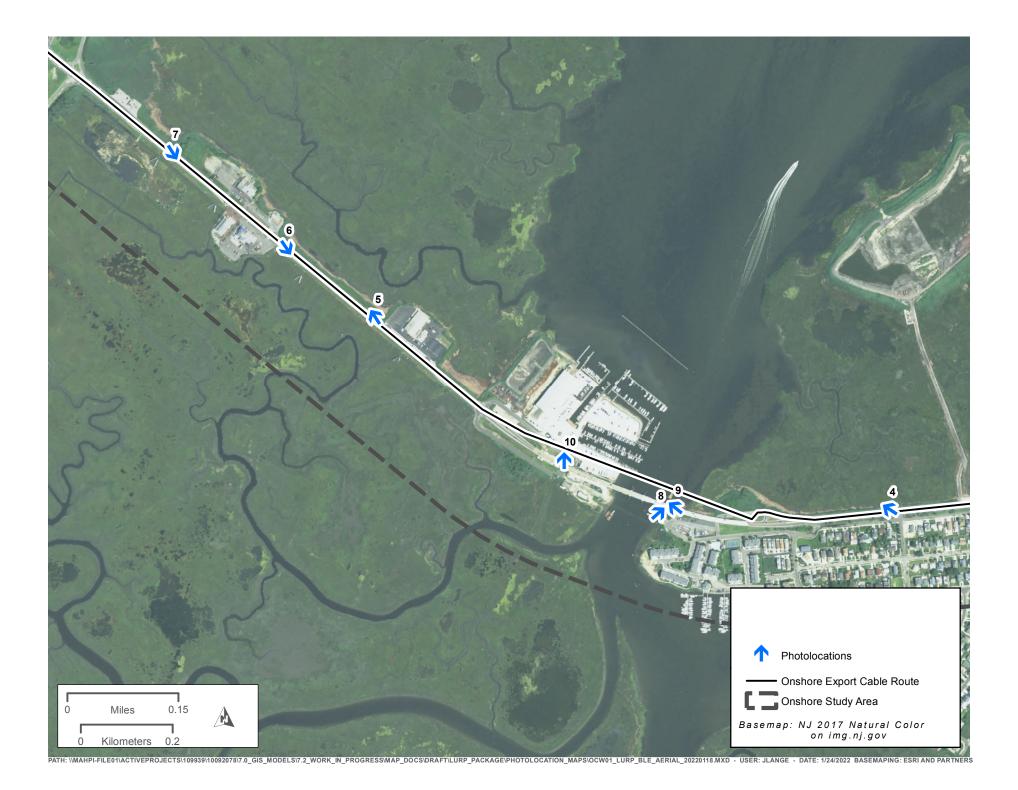






Photo 1: Viewing southeast toward beach from 35th Street beach access footpath in Ocean City



Photo 2: Viewing west northwest at the proposed transition joint bay HDD landing area of 35th Street from the beach access area

Ocean Wind Offshore Windfarm	Photograph Log: BL England Export Cable Route	DATE:	11/18/21	РНОТО
		CREATED BY:	DV	1 and 2
		REVIEWED BY:	DB	
		JOB NO:	10092078	



Photo 3: Viewing southeast along 35th Street at the proposed export cable route alignment in Ocean City



Photo 4: Viewing north along Roosevelt Blvd at proposed export cable route alignment within Ocean City, delineated coastal wetlands adjacent to road.

		DATE:	11/18/21	РНОТО
Ocean Wind Offshore Windfarm	Photograph Log: BL England Export Cable Route	CREATED BY:	DV	
	Photograph Log. DE England Export Gable Route	REVIEWED BY:	DB	3 and 4
		JOB NO:	10092078	



Photo 5: Picture viewing northwest at delineated coastal wetlands adjacent to the Roosevelt Blvd right of way



Photo 6: Viewing south from Roosevelt Blvd at adjacent mapped coastal wetlands

		DATE:	11/18/21	PHOTO
Ocean Wind Offshore Windfarm	Photograph Log: BL England Export Cable Route	CREATED BY:	DV	
		REVIEWED BY:	DB	9 and 10
		JOB NO:	10092078	



Photo 7: Viewing southeast along Roosevelt Blvd from mapped coastal wetlands

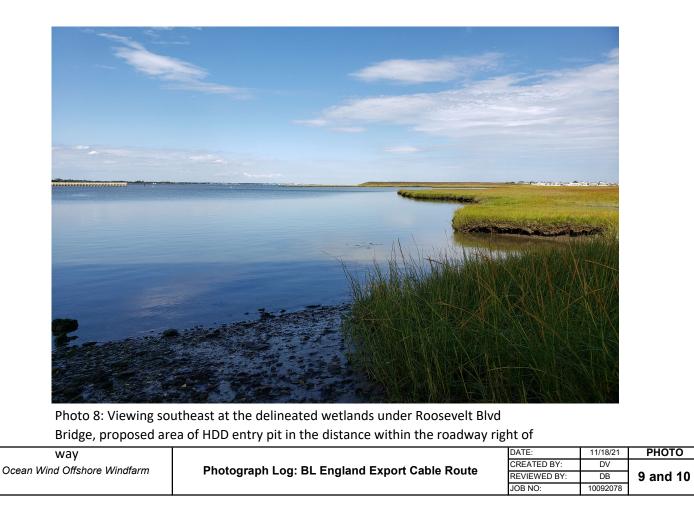




Photo 9: Viewing northwest at the proposed HDD crossing area of Crook Horn Creek, marina in background, public fishing access in foreground right.



		DATE:	11/18/21	PHOTO
Ocean Wind Offshore Windfarm	Photograph Log: BL England Export Cable Route	CREATED BY:	DV	
	Photograph Log. BL England Export Cable Route	CREATED BY: DV		
		JOB NO:	10092078	



Photo 11: Picture viewing north of proposed substation area at BL England.



Photo 12: Viewing north at the proposed onshore substation area at former golf course within the BL England Generating Station property

		DATE:	11/18/21	РНОТО
Ocean Wind Offshore Windfarm	Photograph Log: BL England Export Cable Route	CREATED BY:	DV	
Ocean Wind Onshore Windlam	Photograph Log. BL England Export Cable Route	REVIEWED BY:	DB	11 and 12
		JOB NO:	10092078	



Photo 13: Viewing northwest at the proposed onshore substation area at former golf course within the BL England Generating Station property, delineated freshwater scrub/shrub wetland on right



Photo 14: Viewing northwest from near access road at the proposed onshore substation area at former golf course within the BL England Generating Station property

Ocean Wind Offshore Windfarm		DATE:	11/18/21	рното
Occor Wind Offehere Windform	Photograph Log: BL England Export Cable Route	CREATED BY:	DV	
Ocean Wind Onshore Windlann		REVIEWED BY:	DB	13 and 14
		JOB NO:	10092078	



Photo 15: Viewing southeast from access road at the proposed onshore substation area at former golf course within the BL England Generating Station property



Photo 16: Viewing north at delineated emergent freshwater and scrub/shrub wetland area near southern portion of proposed onshore substation

		DATE:	11/18/21	РНОТО
Ocean Wind Offshore Windfarm	Photograph Log: BL England Export Cable Route	CREATED BY:	DV	
Ocean wind Onshore windlarm	Photograph Log. DL England Export Gable Route	REVIEWED BY:	DB	15 and 16
		JOB NO:	10092078	

Total area of wetland:	Human made?	Is wetland part of a wildlife corridor?	or a 'habitat island'?	Wetland ID:	
		*		Latitude	Longitude
Adjacent land use:		Distance to nearest roadway or othe	er development:	Prepared by:	Date
Dominant wetland systems present:		Contiguous undeveloped buffer zor	ne present:	Wetland Impact: Type	
		0		Evaluation based on:	Area
Is the wetland a separate hydraulic sy	stem?	If not, where does the wetland lie in	n the drainage basin?		
	(1 10			Office	Field
How many tributaries contribute to th	e wettand?	when the & vegetation diversit	y/abundance (see attached list)	Corps manual wetland completed?	delineation

				completed?
Function/Value	Occurrence Y/N	Rationale (Reference #)	Principal Function/Value(s)	Comments
Groundwater Recharge/Discharge				
Floodflow Alteration				
Fish and Shellfish Habitat				
Sediment/Toxicant Retention				
Nutrient Removal				
Production Export				
Sediment/Shoreline Stabilization				
Wildlife Habitat				
Recreation				
Educational/Scientific Value				
Uniqueness/Heritage				
Visual Quality/Aesthetics				
Endangered Species Habitat				
Other				

Total area of wetland:	Human made?	Is wetland part of a wildlife corridor?	or a 'habitat island'?	Wetland ID:	
		*		Latitude	Longitude
Adjacent land use:		Distance to nearest roadway or othe	er development:	Prepared by:	Date
Dominant wetland systems present:		Contiguous undeveloped buffer zor	ne present:	Wetland Impact: Type	
		0		Evaluation based on:	Area
Is the wetland a separate hydraulic sy	stem?	If not, where does the wetland lie in	n the drainage basin?		
	(1 10			Office	Field
How many tributaries contribute to th	e wettand?	when the & vegetation diversit	y/abundance (see attached list)	Corps manual wetland completed?	delineation

				completed?
Function/Value	Occurrence Y/N	Rationale (Reference #)	Principal Function/Value(s)	Comments
Groundwater Recharge/Discharge				
Floodflow Alteration				
Fish and Shellfish Habitat				
Sediment/Toxicant Retention				
Nutrient Removal				
Production Export				
Sediment/Shoreline Stabilization				
Wildlife Habitat				
Recreation				
Educational/Scientific Value				
Uniqueness/Heritage				
Visual Quality/Aesthetics				
Endangered Species Habitat				
Other				

Total area of wetland:	Human made?	Is wetland part of a wildlife corridor?	or a 'habitat island'?	Wetland ID:	
				Latitude	Longitude
Adjacent land use:		Distance to nearest roadway or othe	er development:	Prepared by:	Date
Dominant wetland systems present:		Contiguous undeveloped buffer zon	Wetland Impact: Type		
				Evaluation based on:	Area
Is the wetland a separate hydraulic sy	stem?	If not, where does the wetland lie is	n the drainage basin?		
How many tributaries contribute to the wetland?			Office	Field	
		Wildlife & vegetation diversit	Corps manual wetland completed?	delineation	

				completed?
Function/Value	Occurrence Y/N	Rationale (Reference #)	Principal Function/Value(s)	Comments
Groundwater Recharge/Discharge				
Floodflow Alteration				
Fish and Shellfish Habitat				
Sediment/Toxicant Retention				
Nutrient Removal				
Production Export				
Sediment/Shoreline Stabilization				
Wildlife Habitat				
Recreation				
Educational/Scientific Value				
Uniqueness/Heritage				
Visual Quality/Aesthetics				
Endangered Species Habitat				
Other				

Total area of wetland:	Human made?	Is wetland part of a wildlife corridor?	or a 'habitat island'?	Wetland ID:	
				Latitude	Longitude
Adjacent land use:		Distance to nearest roadway or othe	er development:	Prepared by:	Date
Dominant wetland systems present:		Contiguous undeveloped buffer zon	Wetland Impact: Type		
				Evaluation based on:	Area
Is the wetland a separate hydraulic sy	stem?	If not, where does the wetland lie is	n the drainage basin?		
How many tributaries contribute to the wetland?			Office	Field	
		Wildlife & vegetation diversit	Corps manual wetland completed?	delineation	

				completed?
Function/Value	Occurrence Y/N	Rationale (Reference #)	Principal Function/Value(s)	Comments
Groundwater Recharge/Discharge				
Floodflow Alteration				
Fish and Shellfish Habitat				
Sediment/Toxicant Retention				
Nutrient Removal				
Production Export				
Sediment/Shoreline Stabilization				
Wildlife Habitat				
Recreation				
Educational/Scientific Value				
Uniqueness/Heritage				
Visual Quality/Aesthetics				
Endangered Species Habitat				
Other				

Total area of wetland:	Human made?	Is wetland part of a wildlife corridor?	or a 'habitat island'?	Wetland ID:	
				Latitude	Longitude
Adjacent land use:		Distance to nearest roadway or othe	er development:	Prepared by:	Date
Dominant wetland systems present:		Contiguous undeveloped buffer zon	Wetland Impact: Type		
				Evaluation based on:	Area
Is the wetland a separate hydraulic sy	stem?	If not, where does the wetland lie is	n the drainage basin?		
How many tributaries contribute to the wetland?			Office	Field	
		Wildlife & vegetation diversit	Corps manual wetland completed?	delineation	

				completed?
Function/Value	Occurrence Y/N	Rationale (Reference #)	Principal Function/Value(s)	Comments
Groundwater Recharge/Discharge				
Floodflow Alteration				
Fish and Shellfish Habitat				
Sediment/Toxicant Retention				
Nutrient Removal				
Production Export				
Sediment/Shoreline Stabilization				
Wildlife Habitat				
Recreation				
Educational/Scientific Value				
Uniqueness/Heritage				
Visual Quality/Aesthetics				
Endangered Species Habitat				
Other				



W-8 A W-51 W-9 W-46-W-50 W-49 W-45. W-47. ·W-48 W-44 W-43 _W-34 W-42 N-33 W-41-W-40-_W-35 W-39-W-38-W-1106 W-1105 W-24 W-1104 W-37-W-25 · W-1107 • W-36-. W-1103 W-1108 W-26 N-1102 W-1109 W-27 W-28 · · W-1101 N-29 WETLAND CONFIRMED W-902A _W-32 W-901A . W-903A W-904A W-905A W-908B W-908A WVD-5-W-907A W-906A WND-6



----- Proposed Alignment Freshwater Wetland

Coastal Wetland

Previous LOI Wetland

Wetland Delineation Area

GENERAL NOTES:

1. 1970'S COASTAL WETLAND LINE GRID NUMBERS INCLUDED: 161-2004

2. LINEWORK ON MAP IS SOURCED FROM 1970 WETLANDS BASEMAP (BLACK AND WHITE) MAPPED COASTAL WETLAND IMAGERY AVAILABLE VIA NJ GEOGRAPHIC INFORMATION NETWORK (UPDATED JULY 2, 2019)

3. HORIZONTAL DATUM REFERS TO NEW JERSEY STATE PLANE COORIDNATE SYSTEM NAD83 ZONE 2900.

4. VERTICAL DATUM REFERS TO NORTH AMERICAN VERTICAL DATUM 1988

5. LOT LINES AND RIGHT OF WAY LINES SHOWN HEREON WERE OBTAINED FROM AVAILABLE GEOSPATIAL DATA AND ARE FOR GRAPHICAL REPRESENTATION ONLY

6. WETLAND FLAGS SHOWN HEREON WERE FIELD SURVEYED BY GEOD CORPORATION IN JUNE AND SEPTEMBER 2019, MAY 2020, AND JUNE 2021.

7. CONTOUR INFORMATION SHOWN HERE ON IS BASED ON STATE AVAILABLE BARE EARTH DIGITAL ELEVATION MODEL (DEM) DATA COLLECTED IN EARLY 2019 COVERING ATLANTIC, CAPE MAY, CUMBERLAND, OCEAN, AND SALEM COUNTIES FROM THE NJ OFFICE OF GIS.

8. SUBJECT TO ANY EASEMENTS OR RESTRICTIONS OF RECORD THAT AN ACCURATE TITLE SEARCH MAY DISCLOSE.

9. THIS PLAN IS ONLY VALID IF THE SURVEYORS EMBOSSED SEAL IS AFIXXED HEREON.

I declare that, to the best of my professional knowledge and belief, this map or plan is the result of a field survey made on the date shown below, by me or under my direct supervision, in accordance with the rules and regulations promulgated by the "State Board of Professional Engineers and Land Surveyors."

PAUL J. EMILIUS JR. N.J. PROFESSIONAL LAND SURVEYOR LIC. NO 37186

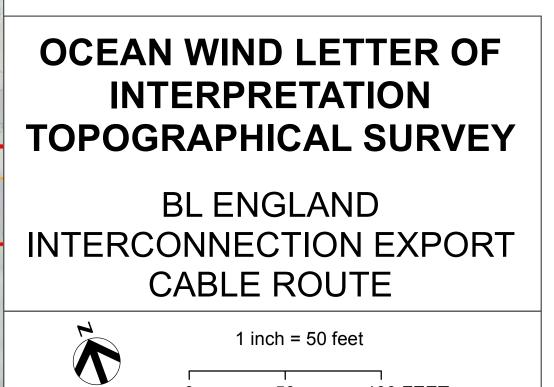
SIGNATURE

Ocean Wind

An Ørsted & PSEG project

DATE

DATA SOURCES: Countours - NJGIN 2019 LiDAR

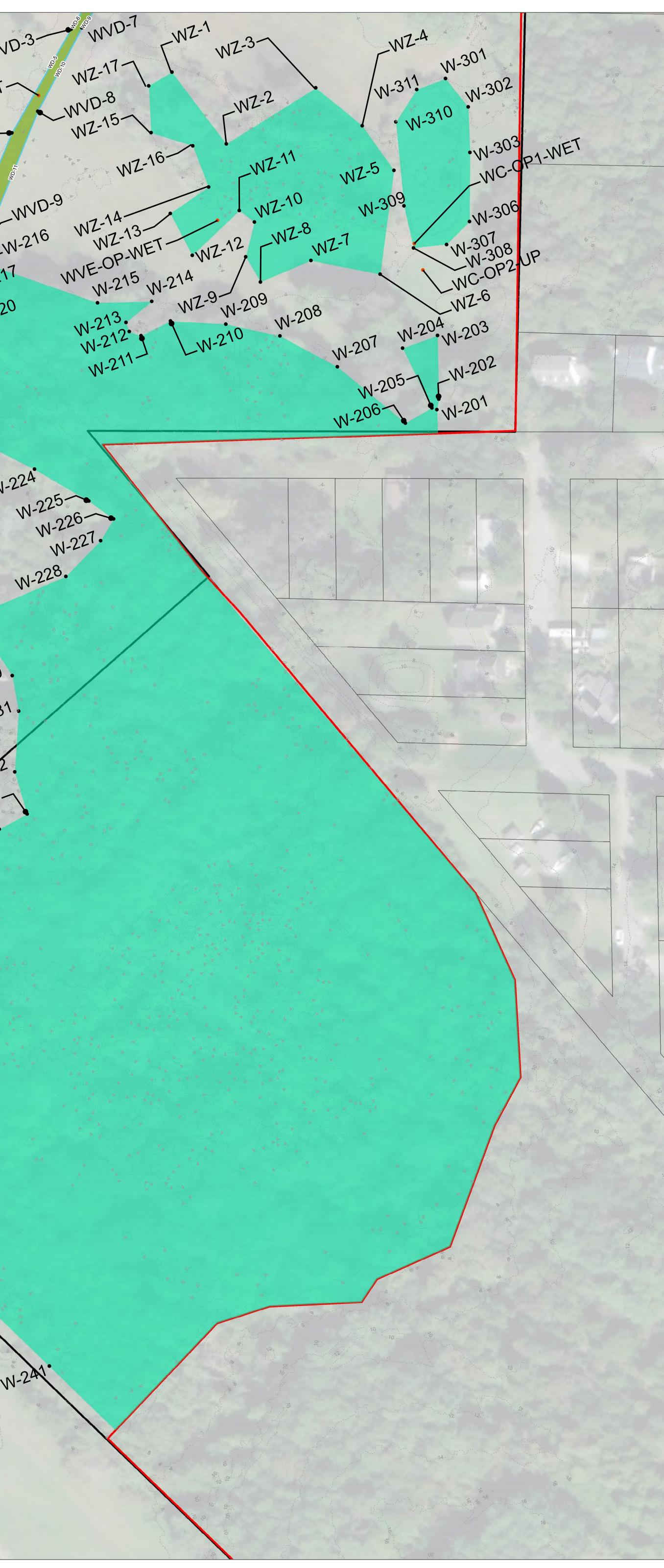


50 100 FEET

77

PAGE 1 OF 3

W-416 WND-3-WNC-2-LWVC-4 WVD-OP-WET W-417 WVD-2-W-801 • W-415 W-802. .W-414 W-807 _WVD-9 W-806W-418. W-803. WND-1-_W-216 .W-413 W-805 W-419. _W-489 -W-412 WN-217 _W-492 -W-490 W-804. -W-411 W-218. W W-220 W-410 W-491 W-493 W-219 - N-420 W-494 W-451 ·W-409 WETLAND CONFIRMED W-221. W-495 W-461. W-460. W-459-W-496 W-450 W-452 W-406 W-407 LW-405 W-404 W-423 · W-458. W-453 W-223. W-457 • W-454 W-456 • W-497 W-224 W-424. W-225-W-226-W-227. W-498 W-455 •W-403 W-228. ·W-402 W-425. W-499 W-229 W-426 • W-401 W-230 . W-500 Block: 479 Lot: 76 W-501 W-231. W-502 W-232 W-233-W-234. W-503 N-504 W-235 B/C/D/E W-236 W-237 N-505 W-238 N-506 WL-WD. WL-WD-87 W-507 -WL-WD-U. WL-WD-WEN 6 WL-WD-9 • ·WL-WD-4 WL-WD-1 WL-WD-2 N-508 WL-WD-3 N-509 _GIS_MODELS\7.2_WORK_IN_PROGRESS\MA FT\PERMITTING\LOI\NJDEP_REVISIONS_FINAL\LOI_BLE_REVISED_PLANS.MXD - USER: ZLEHMANN - DATE: 1/1





Proposed Alignment

Freshwater Wetland

Previous LOI Wetland

Wetland Delineation Area

GENERAL NOTES:

1. 1970'S COASTAL WETLAND LINE GRID NUMBERS INCLUDED: 161-2004

2. LINEWORK ON MAP IS SOURCED FROM 1970 WETLANDS BASEMAP (BLACK AND WHITE) MAPPED COASTAL WETLAND IMAGERY AVAILABLE VIA NJ GEOGRAPHIC INFORMATION NETWORK (UPDATED JULY 2, 2019)

3. HORIZONTAL DATUM REFERS TO NEW JERSEY STATE PLANE COORIDNATE SYSTEM NAD83 ZONE 2900.

4. VERTICAL DATUM REFERS TO NORTH AMERICAN VERTICAL DATUM 1988

5. LOT LINES AND RIGHT OF WAY LINES SHOWN HEREON WERE OBTAINED FROM AVAILABLE GEOSPATIAL DATA AND ARE FOR GRAPHICAL REPRESENTATION ONLY

6. WETLAND FLAGS SHOWN HEREON WERE FIELD SURVEYED BY GEOD CORPORATION IN JUNE AND SEPTEMBER 2019, MAY 2020, AND JUNE 2021.

7. CONTOUR INFORMATION SHOWN HERE ON IS BASED ON STATE AVAILABLE BARE EARTH DIGITAL ELEVATION MODEL (DEM) DATA COLLECTED IN EARLY 2019 COVERING ATLANTIC, CAPE MAY, CUMBERLAND, OCEAN, AND SALEM COUNTIES FROM THE NJ OFFICE OF GIS.

8. SUBJECT TO ANY EASEMENTS OR RESTRICTIONS OF RECORD THAT AN ACCURATE TITLE SEARCH MAY DISCLOSE.

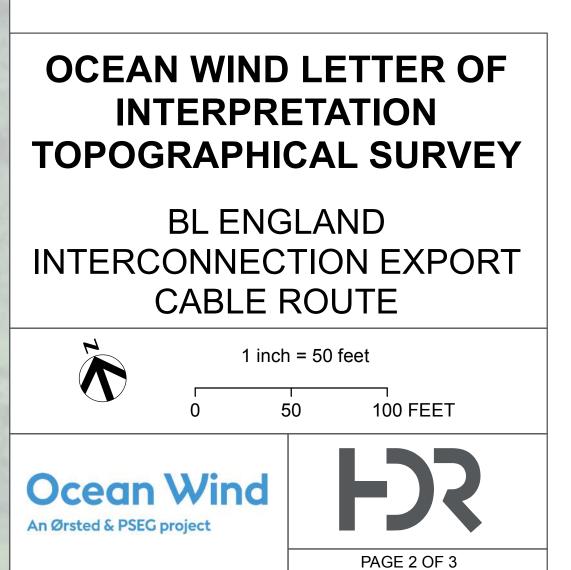
9. THIS PLAN IS ONLY VALID IF THE SURVEYORS EMBOSSED SEAL IS AFIXXED HEREON.

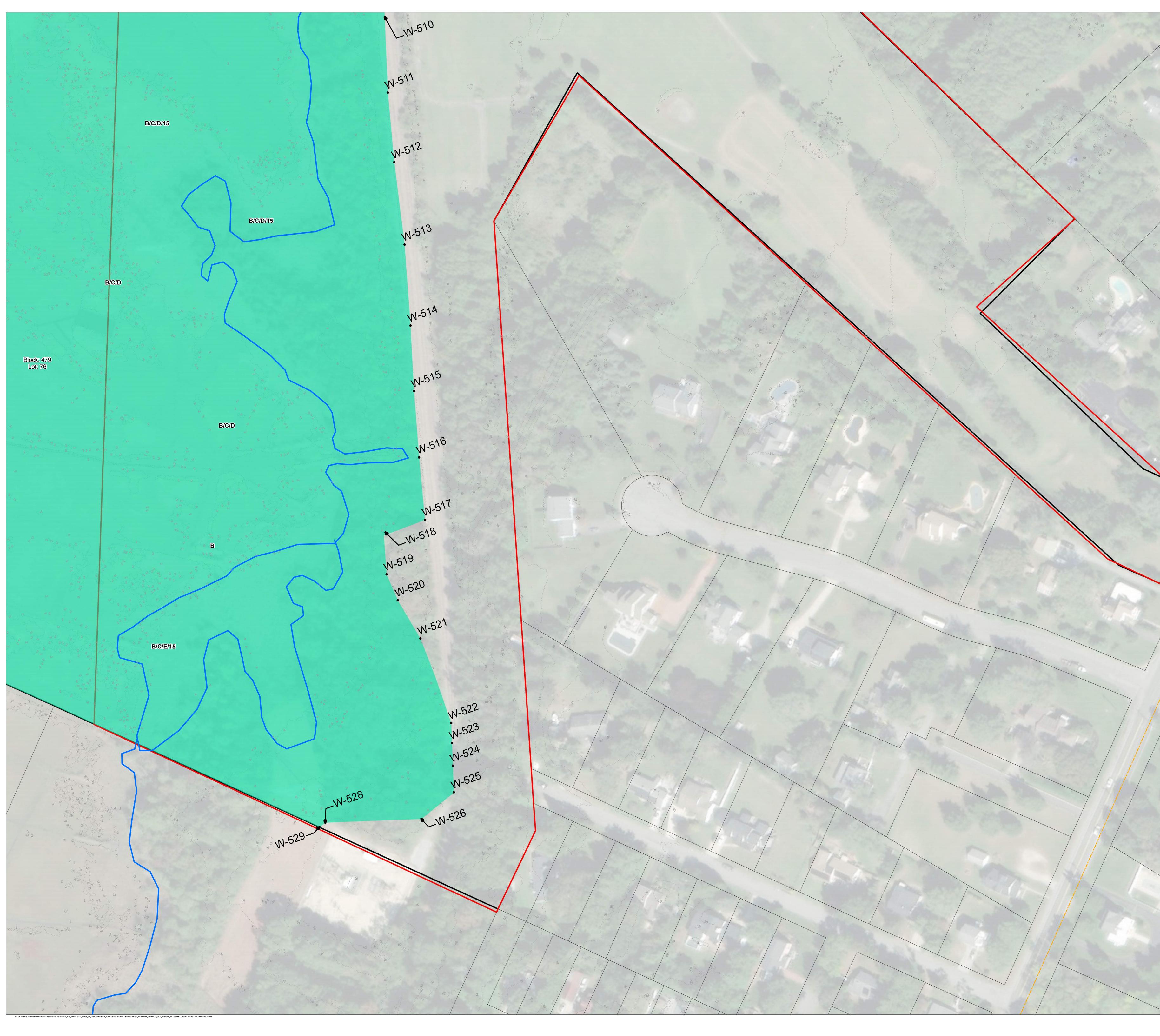
I declare that, to the best of my professional knowledge and belief, this map or plan is the result of a field survey made on the date shown below, by me or under my direct supervision, in accordance with the rules and regulations promulgated by the "State Board of Professional Engineers and Land Surveyors."

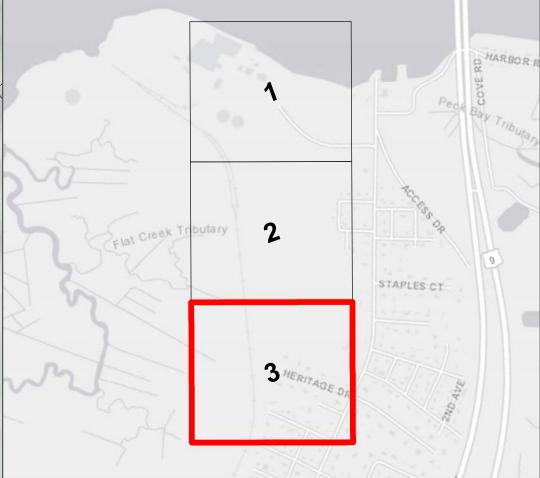
PAUL J. EMILIUS JR. N.J. PROFESSIONAL LAND SURVEYOR LIC. NO 37186

SIGNATURE

DATE







----- Proposed Alignment Freshwater Wetland

Coastal Wetland

Previous LOI Wetland

Wetland Delineation Area
Parcel Boundary

GENERAL NOTES:

1. 1970'S COASTAL WETLAND LINE GRID NUMBERS INCLUDED: 161-2004

2. LINEWORK ON MAP IS SOURCED FROM 1970 WETLANDS BASEMAP (BLACK AND WHITE) MAPPED COASTAL WETLAND IMAGERY AVAILABLE VIA NJ GEOGRAPHIC INFORMATION NETWORK (UPDATED JULY 2, 2019)

3. HORIZONTAL DATUM REFERS TO NEW JERSEY STATE PLANE COORIDNATE SYSTEM NAD83 ZONE 2900.

4. VERTICAL DATUM REFERS TO NORTH AMERICAN VERTICAL DATUM 1988

5. LOT LINES AND RIGHT OF WAY LINES SHOWN HEREON WERE OBTAINED FROM AVAILABLE GEOSPATIAL DATA AND ARE FOR GRAPHICAL REPRESENTATION ONLY

6. WETLAND FLAGS SHOWN HEREON WERE FIELD SURVEYED BY GEOD CORPORATION IN JUNE AND SEPTEMBER 2019, MAY 2020, AND JUNE 2021.

7. CONTOUR INFORMATION SHOWN HERE ON IS BASED ON STATE AVAILABLE BARE EARTH DIGITAL ELEVATION MODEL (DEM) DATA COLLECTED IN EARLY 2019 COVERING ATLANTIC, CAPE MAY, CUMBERLAND, OCEAN, AND SALEM COUNTIES FROM THE NJ OFFICE OF GIS.

8. SUBJECT TO ANY EASEMENTS OR RESTRICTIONS OF RECORD THAT AN ACCURATE TITLE SEARCH MAY DISCLOSE.

9. THIS PLAN IS ONLY VALID IF THE SURVEYORS EMBOSSED SEAL IS AFIXXED HEREON.

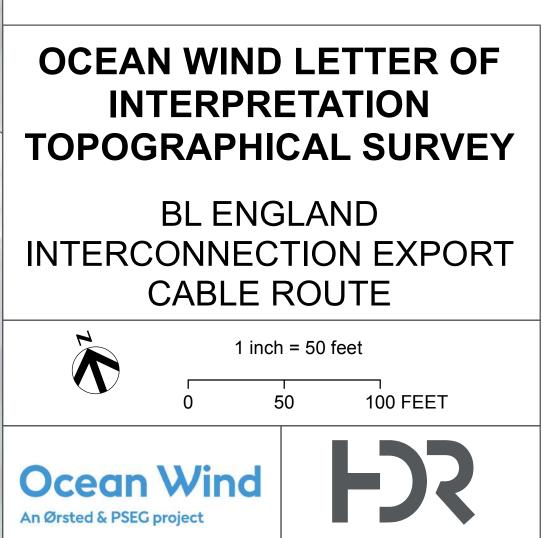
I declare that, to the best of my professional knowledge and belief, this map or plan is the result of a field survey made on the date shown below, by me or under my direct supervision, in accordance with the rules and regulations promulgated by the "State Board of Professional Engineers and Land Surveyors."

PAUL J. EMILIUS JR. N.J. PROFESSIONAL LAND SURVEYOR LIC. NO 37186

SIGNATURE

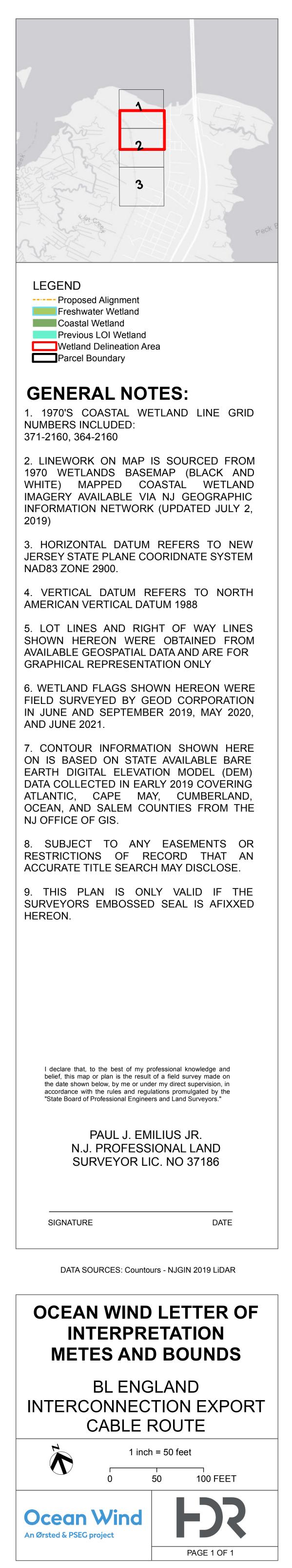
DATE

PAGE 3 OF 3

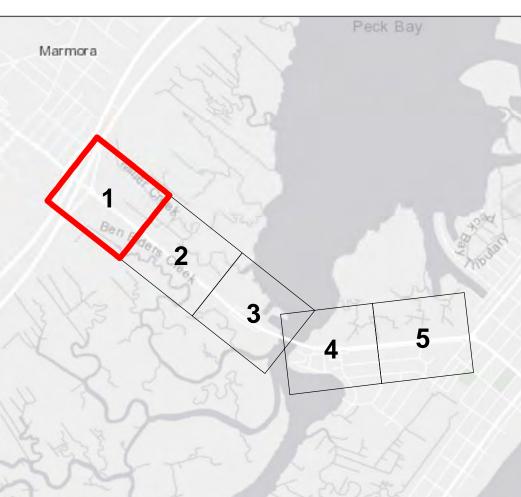


			FLAG LABEL	NORTHING	EASTING
LABEL	BEARING	LENGTH	W-216	164807	454361.6
WA-1	68	65.08	WC-1	164663.9	454798.8
WA-2	77	64.07	WC-2	164655.4	454833.2
WA-3	147	49.81	WC-3	164670.1	454864.4
WA-4	79	71.07	WC-4	164738.7	454889.9
WA-5	161	58.80	WC-5	164784.9	454904.8
WA-6	222	62.02	WC-6	164821.5	454892.4
WA-7	287	52.69	WC-7	164821	454859.5
WA-8	281	149.54	WC-8	164796.3	454827.1
WA-9	0	47.53	WC-9	164709.3	454804.6
WB-1	31	63.77	WC-0P1-WET	164668	454804.0
WB-2	93	62.01	WC-OP2-UP	164638.3	454800.1
WB-3	165	76.31	WC-OF2-OF WL-WD-1	163827.8	453768
WB-4	267	55.83	WL-WD-1	163797.6	453767
WB-5	293	63.69	WL-WD-3		
WD-1	240	20.85	WL-WD-3	163795.8 163804.6	453802.5 453809.6
WD-2	255	39.94			
WD-3	46	76.64	WL-WD-5 WL-WD-6	163855.1 163892.8	453817.5
WD-4	43	116.37			453822.9
WD-5	50	126.89	WL-WD-7	163908.2	453798.9
WD-6	51	118.59	WL-WD-8	163906	453776.6
WD-7	74	56.44	WL-WD-9	163864.6	453763.4
WD-8	235	62.31	WL-WD-UP	163842.4	453819.2
WD-9	235	101.39	WL-WD-WET	163842.6	453809.2
WD-10	228	100.32	WVA-1	165324.5	453991.7
WD-11	222	149.22	WVA-2	165276.9	453991.4
WD-12	210	22.57	WVA-3	165248.9	454138.3
WC-1	280	16.08	WVA-4	165233.1	454188.6
WC-2	164	14.44	WVA-5	165278.9	454230.4
WC-3	80	9.02	WVA-6	165334.5	454211.4
WC-4	21	9.55	WVA-7	165321	454141.7
			WVA-8	165362.8	454114.5
			WVA-9	165348.9	454052
			WVB-1	165178.1	454324
			WVB-2	165152.8	454382.4
			WVB-3	165155.9	454438.1
			WVB-4	165229.7	454418.5
			WVB-5	165233	454356.6
			WVC-1	165072.9	454326
			WVC-2	165074.8	454310
			WVC-3	165062.8	454314.2
			WVC-4	165064.8	454322.8
			WVD-1	164839.3	454360.3
			WVD-2	164924.9	454439.2
			WVD-3	165007	454535.9
			WVD-4	165082.1	454627.7
			WVD-5	165097.6	454682
			WVD-6	165062.3	454630.7
			WVD-7	165004.4	454547.4
			WVD-8	164937.2	454472.9
			WVD-9	164826.5	454372.9
			WVD-OP-WET	164952.7	454479.5

PATH: WAHPI-FILE014CTIVEPROJECTS1109339110092078/7.0_GIS_MODELS/7.2_WORK_IN_PROGRESSIMAP_DOCS/DRAFT/PERMITTING/LO/INJDEP_REVISIONS_FINAL/LO/_BLE_MB.MXD - USER: ZLEHMANN - DATE: 1/11/2022







----- Proposed Alignment Freshwater Wetland

- Coastal Wetland
- Previous LOI Wetland
- Wetland Delineation Area

GENERAL NOTES:

1. 1970'S COASTAL WETLAND LINE GRID NUMBERS INCLUDED: 147-2010

2. LINEWORK ON MAP IS SOURCED FROM 1970 WETLANDS BASEMAP (BLACK AND WHITE) MAPPED COASTAL WETLAND IMAGERY AVAILABLE VIA NJ GEOGRAPHIC INFORMATION NETWORK (UPDATED JULY 2, 2019)

3. HORIZONTAL DATUM REFERS TO NEW JERSEY STATE PLANE COORIDNATE SYSTEM NAD83 ZONE 2900.

4. VERTICAL DATUM REFERS TO NORTH AMERICAN VERTICAL DATUM 1988

5. LOT LINES AND RIGHT OF WAY LINES SHOWN HEREON WERE OBTAINED FROM AVAILABLE GEOSPATIAL DATA AND ARE FOR GRAPHICAL REPRESENTATION ONLY

6. WETLAND FLAGS SHOWN HEREON WERE FIELD SURVEYED BY GEOD CORPORATION IN JUNE AND SEPTEMBER 2019, MAY 2020, AND JUNE 2021.

7. CONTOUR INFORMATION SHOWN HERE ON IS BASED ON STATE AVAILABLE BARE EARTH DIGITAL ELEVATION MODEL (DEM) DATA COLLECTED IN EARLY 2019 COVÈRING ATLANTIC, CAPE MAY, CUMBERLAND, OCEAN, AND SALEM COUNTIES FROM THE NJ OFFICE OF GIS.

8. SUBJECT TO ANY EASEMENTS OR RESTRICTIONS OF RECORD THAT AN ACCURATE TITLE SEARCH MAY DISCLOSE.

9. THIS PLAN IS ONLY VALID IF THE SURVEYORS EMBOSSED SEAL IS AFIXXED HEREON.

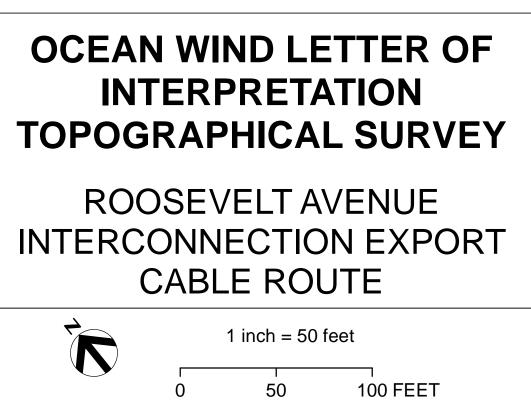
I declare that, to the best of my professional knowledge and belief, this map or plan is the result of a field survey made on the date shown below, by me or under my direct supervision, in accordance with the rules and regulations promulgated by the "State Board of Professional Engineers and Land Surveyors."

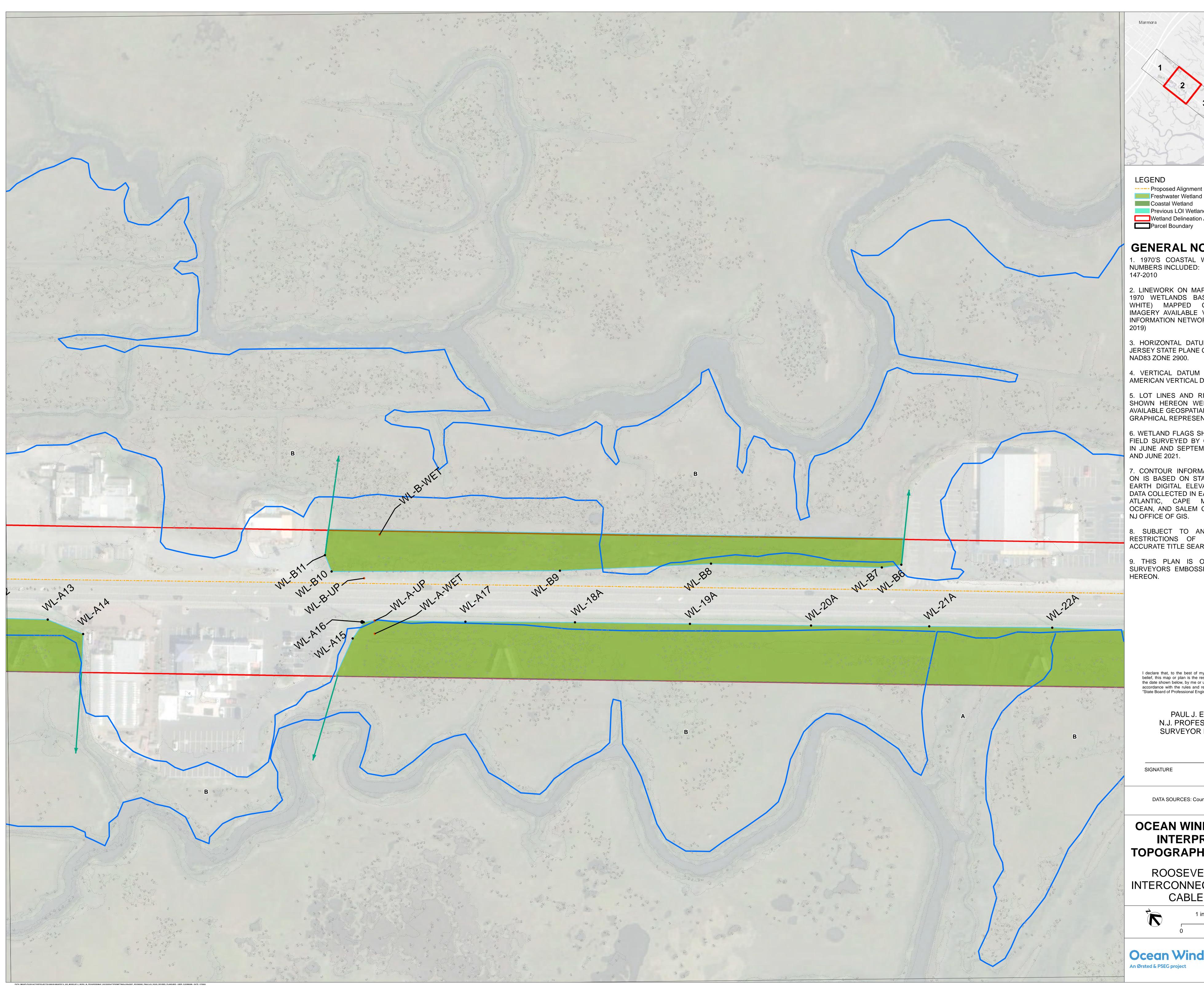
PAUL J. EMILIUS JR. N.J. PROFESSIONAL LAND SURVEYOR LIC. NO 37186

SIGNATURE

DATE

PAGE 1 OF 5





Marmora

----- Proposed Alignment Freshwater Wetland

Coastal Wetland

Previous LOI Wetland

Wetland Delineation Area

GENERAL NOTES:

1. 1970'S COASTAL WETLAND LINE GRID NUMBERS INCLUDED: 147-2010

Peck Bay

2. LINEWORK ON MAP IS SOURCED FROM 1970 WETLANDS BASEMAP (BLACK AND WHITE) MAPPED COASTAL WETLAND IMAGERY AVAILABLE VIA NJ GEOGRAPHIC INFORMATION NETWORK (UPDATED JULY 2, 2019)

3. HORIZONTAL DATUM REFERS TO NEW JERSEY STATE PLANE COORIDNATE SYSTEM NAD83 ZONE 2900.

4. VERTICAL DATUM REFERS TO NORTH AMERICAN VERTICAL DATUM 1988

5. LOT LINES AND RIGHT OF WAY LINES SHOWN HEREON WERE OBTAINED FROM AVAILABLE GEOSPATIAL DATA AND ARE FOR GRAPHICAL REPRESENTATION ONLY

6. WETLAND FLAGS SHOWN HEREON WERE FIELD SURVEYED BY GEOD CORPORATION IN JUNE AND SEPTEMBER 2019, MAY 2020, AND JUNE 2021.

7. CONTOUR INFORMATION SHOWN HERE ON IS BASED ON STATE AVAILABLE BARE EARTH DIGITAL ELEVATION MODEL (DEM) DATA COLLECTED IN EARLY 2019 COVERING ATLANTIC, CAPE MAY, CUMBERLAND, OCEAN, AND SALEM COUNTIES FROM THE NJ OFFICE OF GIS.

8. SUBJECT TO ANY EASEMENTS OR RESTRICTIONS OF RECORD THAT AN ACCURATE TITLE SEARCH MAY DISCLOSE.

9. THIS PLAN IS ONLY VALID IF THE SURVEYORS EMBOSSED SEAL IS AFIXXED HEREON.

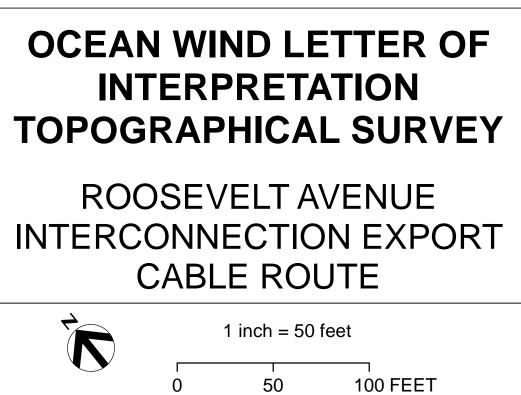
I declare that, to the best of my professional knowledge and belief, this map or plan is the result of a field survey made on the date shown below, by me or under my direct supervision, in accordance with the rules and regulations promulgated by the "State Board of Professional Engineers and Land Surveyors."

PAUL J. EMILIUS JR. N.J. PROFESSIONAL LAND SURVEYOR LIC. NO 37186

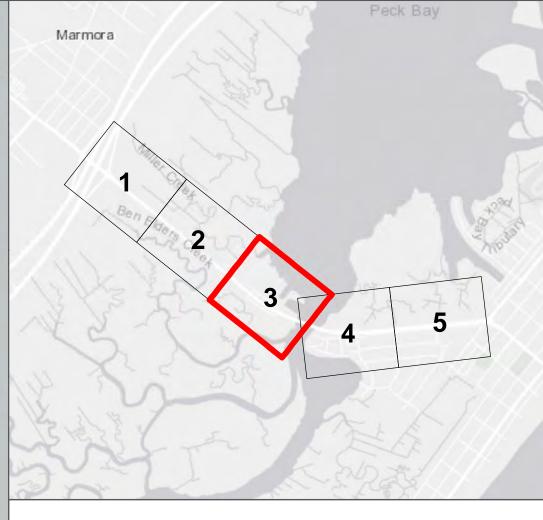
SIGNATURE

DATE

PAGE 2 OF 5







Proposed Alignment
 Freshwater Wetland
 Coastal Wetland
 Previous LOI Wetland

Wetland Delineation Area

GENERAL NOTES:

1. 1970'S COASTAL WETLAND LINE GRID NUMBERS INCLUDED: 147-2010

2. LINEWORK ON MAP IS SOURCED FROM 1970 WETLANDS BASEMAP (BLACK AND WHITE) MAPPED COASTAL WETLAND IMAGERY AVAILABLE VIA NJ GEOGRAPHIC INFORMATION NETWORK (UPDATED JULY 2, 2019)

3. HORIZONTAL DATUM REFERS TO NEW JERSEY STATE PLANE COORIDNATE SYSTEM NAD83 ZONE 2900.

4. VERTICAL DATUM REFERS TO NORTH AMERICAN VERTICAL DATUM 1988

5. LOT LINES AND RIGHT OF WAY LINES SHOWN HEREON WERE OBTAINED FROM AVAILABLE GEOSPATIAL DATA AND ARE FOR GRAPHICAL REPRESENTATION ONLY

6. WETLAND FLAGS SHOWN HEREON WERE FIELD SURVEYED BY GEOD CORPORATION IN JUNE AND SEPTEMBER 2019, MAY 2020, AND JUNE 2021.

7. CONTOUR INFORMATION SHOWN HERE ON IS BASED ON STATE AVAILABLE BARE EARTH DIGITAL ELEVATION MODEL (DEM) DATA COLLECTED IN EARLY 2019 COVERING ATLANTIC, CAPE MAY, CUMBERLAND, OCEAN, AND SALEM COUNTIES FROM THE NJ OFFICE OF GIS.

8. SUBJECT TO ANY EASEMENTS OR RESTRICTIONS OF RECORD THAT AN ACCURATE TITLE SEARCH MAY DISCLOSE.

9. THIS PLAN IS ONLY VALID IF THE SURVEYORS EMBOSSED SEAL IS AFIXXED HEREON.

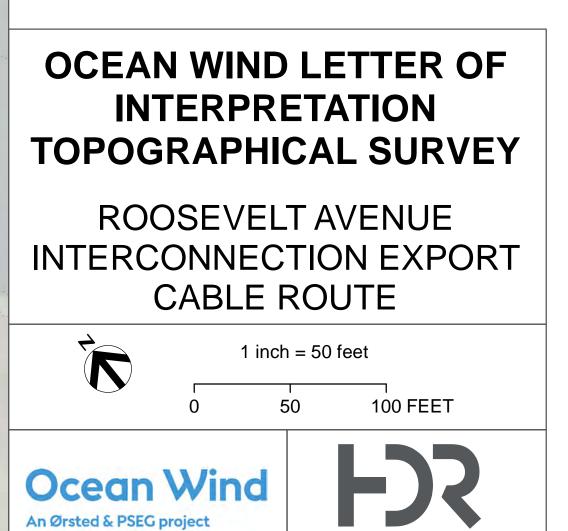
I declare that, to the best of my professional knowledge and belief, this map or plan is the result of a field survey made on the date shown below, by me or under my direct supervision, in accordance with the rules and regulations promulgated by the "State Board of Professional Engineers and Land Surveyors."

PAUL J. EMILIUS JR. N.J. PROFESSIONAL LAND SURVEYOR LIC. NO 37186

SIGNATURE

DATE

PAGE 3 OF 5







Marmora

----- Proposed Alignment Freshwater Wetland

- Coastal Wetland
- Previous LOI Wetland
- Wetland Delineation Area

GENERAL NOTES:

. 1970'S COASTAL WETLAND LINE GRID NUMBERS INCLUDED: 147-2010

Peck Bay

2. LINEWORK ON MAP IS SOURCED FROM 1970 WETLANDS BASEMAP (BLACK AND WHITE) MAPPED COASTAL WETLAND IMAGERY AVAILABLE VIA NJ GEOGRAPHIC INFORMATION NETWORK (UPDATED JULY 2, 2019)

3. HORIZONTAL DATUM REFERS TO NEW JERSEY STATE PLANE COORIDNATE SYSTEM NAD83 ZONE 2900.

4. VERTICAL DATUM REFERS TO NORTH AMERICAN VERTICAL DATUM 1988

5. LOT LINES AND RIGHT OF WAY LINES SHOWN HEREON WERE OBTAINED FROM AVAILABLE GEOSPATIAL DATA AND ARE FOR GRAPHICAL REPRESENTATION ONLY

6. WETLAND FLAGS SHOWN HEREON WERE FIELD SURVEYED BY GEOD CORPORATION IN JUNE AND SEPTEMBER 2019, MAY 2020, AND JUNE 2021.

7. CONTOUR INFORMATION SHOWN HERE ON IS BASED ON STATE AVAILABLE BARE EARTH DIGITAL ELEVATION MODEL (DEM) DATA COLLECTED IN EARLY 2019 COVÈRING ATLANTIC, CAPE MAY, CUMBERLAND, OCEAN, AND SALEM COUNTIES FROM THE NJ OFFICE OF GIS.

8. SUBJECT TO ANY EASEMENTS OR RESTRICTIONS OF RECORD THAT AN ACCURATE TITLE SEARCH MAY DISCLOSE.

9. THIS PLAN IS ONLY VALID IF THE SURVEYORS EMBOSSED SEAL IS AFIXXED HEREON.

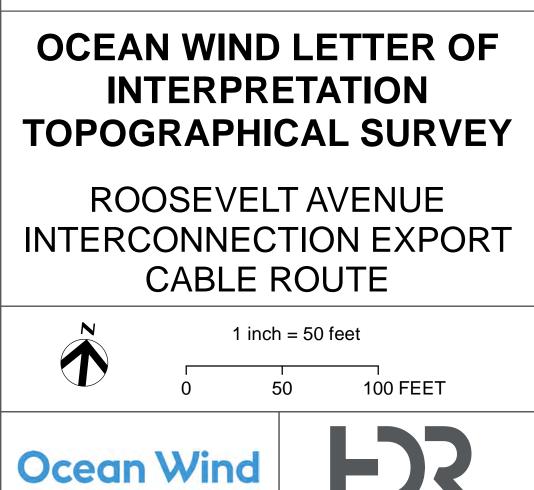
I declare that, to the best of my professional knowledge and belief, this map or plan is the result of a field survey made on the date shown below, by me or under my direct supervision, in accordance with the rules and regulations promulgated by the "State Board of Professional Engineers and Land Surveyors."

PAUL J. EMILIUS JR. N.J. PROFESSIONAL LAND SURVEYOR LIC. NO 37186

SIGNATURE

DATE

PAGE 4 OF 5







Proposed Alignment
Freshwater Wetland
Coastal Wetland
Previous LOI Wetland
Wetland Delineation Area
Parcel Boundary

GENERAL NOTES:

1. 1970'S COASTAL WETLAND LINE GRID NUMBERS INCLUDED: 147-2010

2. LINEWORK ON MAP IS SOURCED FROM 1970 WETLANDS BASEMAP (BLACK AND WHITE) MAPPED COASTAL WETLAND IMAGERY AVAILABLE VIA NJ GEOGRAPHIC INFORMATION NETWORK (UPDATED JULY 2, 2019)

3. HORIZONTAL DATUM REFERS TO NEW JERSEY STATE PLANE COORIDNATE SYSTEM NAD83 ZONE 2900.

4. VERTICAL DATUM REFERS TO NORTH AMERICAN VERTICAL DATUM 1988

5. LOT LINES AND RIGHT OF WAY LINES SHOWN HEREON WERE OBTAINED FROM AVAILABLE GEOSPATIAL DATA AND ARE FOR GRAPHICAL REPRESENTATION ONLY

6. WETLAND FLAGS SHOWN HEREON WERE FIELD SURVEYED BY GEOD CORPORATION IN JUNE AND SEPTEMBER 2019, MAY 2020, AND JUNE 2021.

7. CONTOUR INFORMATION SHOWN HERE ON IS BASED ON STATE AVAILABLE BARE EARTH DIGITAL ELEVATION MODEL (DEM) DATA COLLECTED IN EARLY 2019 COVERING ATLANTIC, CAPE MAY, CUMBERLAND, OCEAN, AND SALEM COUNTIES FROM THE NJ OFFICE OF GIS.

8. SUBJECT TO ANY EASEMENTS OR RESTRICTIONS OF RECORD THAT AN ACCURATE TITLE SEARCH MAY DISCLOSE.

9. THIS PLAN IS ONLY VALID IF THE SURVEYORS EMBOSSED SEAL IS AFIXXED HEREON.

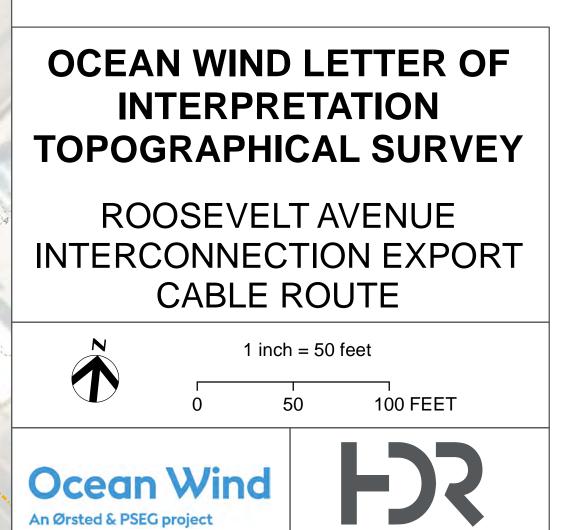
I declare that, to the best of my professional knowledge and belief, this map or plan is the result of a field survey made on the date shown below, by me or under my direct supervision, in accordance with the rules and regulations promulgated by the "State Board of Professional Engineers and Land Surveyors."

PAUL J. EMILIUS JR. N.J. PROFESSIONAL LAND SURVEYOR LIC. NO 37186

SIGNATURE

DATE

PAGE 5 OF 5



LABEL	BEARING	LENGTH	FLAG LABEL	NORTHING	EASTING
WL-A-1	124	140.67	WL-18A	154453	453663.1
WL-A-2	64	70.15	WL-19A	154328.5	453813
WL-A-3	73	33.42	WL-20A	154197.2	453970.7
WL-A-4	120	18.60	WL-21A	154070	454125.5
WL-A-5 WL-A-6	130 129	153.78 185.64	WL-22A WL-23A	153937 153819.1	454285.8 454420
WL-A-7	129	194.87	WL-23A WL-24A	153777.3	454433.7
WL-A-8	130	205.19	WL-25A	153746.2	454480.1
WL-A-9	129	200.30	WL-26A	153634	454615
WL-A-10	130	208.35	WL-27A	153488.3	454784.8
WL-A-11	131	178.61	WL-28A	153405	454778.9
WL-A-12	162	43.98	WL-29A	153311.1	454908.5
WL-A-13	124	55.89	WL-30A	153232.9	455025.4
WL-A-14 WL-A-15	130 131	175.37 223.74	WL-A-UP WL-A-WET	154669 154651.4	453401.3 453387.5
WL-A-16	184	83.47	WL-A1	155849	451931.3
WL-A-17	126	160.03	WL-A10	155136.2	452803.1
WL-A-18	127	92.53	WL-A11	155080	452876.6
WL-A-19	12	17.33	WL-A12	155097	452880.2
WL-A-20	130	120.50	WL-A13	155018.8	452971.9
WL-A-21	151	64.81	WL-A14	154962	453003.1
WL-A-22	222 61	65.25 30.03	WL-A15 WL-A16	154668.8	453353.3
WL-A-23 WL-A-24	101	35.47	WL-A17	154678.4 154570.7	453385.3 453519.6
WL-A-25	134	71.58	WL-A2	155842	451966.1
WL-A-26	129	219.35	WL-A3	155792.6	452017.9
WL-A-27	130	214.79	WL-A4	155654	452187.9
WL-A-28	118	85.39	WL-A5	155516.5	452352.9
WL-A-29	129	178.71	WL-A6	155476.7	452428.5
WL-A-30	131	209.09	WL-A7	155364.9	452567.9
WL-A-31	128	109.87	WL-A8	155227.5	452725.4
WL-A-32 WL-B-1	201 269	26.12 72.71	WL-A9 WL-B-UP	155160.6 154735.9	452812.6 453432.4
WL-B-2	209	39.84	WL-B-WET	154776.8	453499.5
WL-B-3	311	144.34	WL-B1	153619.3	454822
WL-B-4	308	208.90	WL-B10	154779.5	453397
WL-B-5	44	28.76	WL-B11	154808.2	453405.6
WL-B-6	38	48.66	WL-B12	155432.7	452614.5
WL-B-7	222	45.15	WL-B13	155654.7	452379.6
WL-B-8 WL-B-9	301 310	33.34 289.66	WL-B14 WL-B15	155789.6 155847.2	452203.1 452126.2
WL-B-10	306	256.27	WL-B16	155919.8	452046.8
WL-B-11	309	386.74	WL-B17	155975.8	452015.8
WL-B-12	17	29.90	WL-B2	153621.4	454782.2
WL-B-13	45	44.16	WL-B3	153715.5	454672.8
WL-B-14	215	70.07	WL-B4	153843.6	454507.7
WL-B-15 WL-B-16	308 313	80.89 323.20	WL-B5 WL-B6	153864.4 154180.9	454527.6 454154.4
WL-B-17	31	53.00	WL-B7	154198.1	454125.8
WL-C-1	201	47.51	WL-B8	154385.3	453904.9
WL-C-2	142	156.69	WL-B9	154537.2	453698.4
WL-C-3	271	169.64	WL-C-UP	152942.7	459101.4
WL-C-4	263	247.50	WL-C-WET	152964.5	459092.2
WL-C-5 WL-C-6	6 59	13.55 3.45	WL-C1 WL-C10	153146.6 152879.5	459423.8 458332.6
WL-C-7	266	78.49	WL-C11	152890.3	458322
WL-C-8	259	135.82	WL-C12	152870.2	458225.8
WL-C-9	265	331.56	WL-C13	152863.2	458226.1
WL-C-10	264	219.07	WL-C14	152833.1	457941.8
WL-C-11	315	15.14	WL-C15	152813.8	457749.5
WL-C-12 WL-C-13	258 177	98.30 6.99	WL-C16 WL-C17	152798.6 152777.4	457548.3 457347.1
WL-C-14	264	285.81	WL-C18	152754.8	457154.7
WL-C-15	264	193.33	WL-C19	152755.8	456989
WL-C-16	266	201.76	WL-C2	153102.1	459407
WL-C-17	264	202.32	WL-C20	152793.5	456810.9
WL-C-18	263	193.71	WL-C21	152754.6	456507.9
WL-C-19	270	165.66	WL-C22	152787.5	456380.9
WL-C-20 WL-C-21	282 263	182.04 305.54	WL-C3	152978.4	459503.1 459333.5
WL-C-21 WL-C-22	263 285	305.54 131.19	WL-C4 WL-C5	152979.9 152949.3	459333.5 459087.9
WL-C-22 WL-C-23	285	118.08	WL-C6	152949.3	459087.9
			WL-C7	152958.8	459013.9
			WL-C8	152932.3	458880.7
			WL-C9	152902.5	458550.5

PATH: \WAHPI-FILE91\ACTIVEPROJECTS\109939110992978/7.0_GIS_MODELSI7.2_WORK_IN_PROGRESSIMAP_DOCSIDRAFTIPERMITTINGILOIINJDEP_REVISIONS_FINAL\LOL_ROOS_MB.MXD - USER: ZLEHMANN - DATE: 1/1/12022



Proposed Alignment
 Freshwater Wetland
 Coastal Wetland
 Previous LOI Wetland
 Wetland Delineation Area
 Parcel Boundary

GENERAL NOTES:

1. 1970'S COASTAL WETLAND LINE GRID NUMBERS INCLUDED: 371-2160, 364-2160

2. LINEWORK ON MAP IS SOURCED FROM 1970 WETLANDS BASEMAP (BLACK AND WHITE) MAPPED COASTAL WETLAND IMAGERY AVAILABLE VIA NJ GEOGRAPHIC INFORMATION NETWORK (UPDATED JULY 2, 2019)

3. HORIZONTAL DATUM REFERS TO NEW JERSEY STATE PLANE COORIDNATE SYSTEM NAD83 ZONE 2900.

4. VERTICAL DATUM REFERS TO NORTH AMERICAN VERTICAL DATUM 1988

5. LOT LINES AND RIGHT OF WAY LINES SHOWN HEREON WERE OBTAINED FROM AVAILABLE GEOSPATIAL DATA AND ARE FOR GRAPHICAL REPRESENTATION ONLY

6. WETLAND FLAGS SHOWN HEREON WERE FIELD SURVEYED BY GEOD CORPORATION IN JUNE AND SEPTEMBER 2019, MAY 2020, AND JUNE 2021.

7. CONTOUR INFORMATION SHOWN HERE ON IS BASED ON STATE AVAILABLE BARE EARTH DIGITAL ELEVATION MODEL (DEM) DATA COLLECTED IN EARLY 2019 COVERING ATLANTIC, CAPE MAY, CUMBERLAND, OCEAN, AND SALEM COUNTIES FROM THE NJ OFFICE OF GIS.

8. SUBJECT TO ANY EASEMENTS OR RESTRICTIONS OF RECORD THAT AN ACCURATE TITLE SEARCH MAY DISCLOSE.

9. THIS PLAN IS ONLY VALID IF THE SURVEYORS EMBOSSED SEAL IS AFIXXED HEREON.

I declare that, to the best of my professional knowledge and belief, this map or plan is the result of a field survey made on the date shown below, by me or under my direct supervision, in accordance with the rules and regulations promulgated by the "State Board of Professional Engineers and Land Surveyors."

PAUL J. EMILIUS JR. N.J. PROFESSIONAL LAND SURVEYOR LIC. NO 37186

SIGNATURE

DATE

