Memorandum

To: Mr. Compton Donohue
East Point Energy
310 4th Street NE, 3rd Floor
Charlottesville, VA 22902

Date: September 27, 2024

Project #: 42790.00

From: Sara Berryman, CSS
VHB

Re: Amendment to Wetland and Watercourse Delineation Report, Oxford Energy Center, LLC, dated June 24, 2021

VHB has prepared this memo as an amendment to the Wetland and Watercourse Delineation Report that was previously prepared for the Oxford Energy Center project in Oxford, CT (Figure 1), dated June 24, 2021. The original delineation field work was conducted on June 1-2 of 2021. A more recent site visit conducted on March 20, 2024, concluded that the boundaries of Wetland 4 that were previously delineated during the original field work have been extended into the wooded area to the east.

Wetland Area 4

Wetland Area 4 is located near the center of the Study Area within the utility right-of-way (ROW), starting near the gravel access road and spreading to the east towards North Larkey Road (Figure 2). Wetland Area 4 encompasses approximately 0.33 acres.

Topography, Hydrology, and Soils

Wetland 4 is primarily flat within the utility ROW and forested area; however, slight upgradient slopes are present in the wooded area towards North Larkey Road. The area is suspected of being fed by stormwater runoff from the surrounding upgradient areas. An intermittent stream (Stream 2) was also delineated during the revisit that flows west from Wetland Area 4 across the access road and into Wetland Area 2.

Photo 1 – Looking west from treeline in Wetland Area 4

Soils in Wetland Area 4 consisted of saturated, poorly drained, fine sandy loam overlayed with a thick layer (eight inches) of mucky mineral soil. A restrictive layer of rock was encountered at 12 inches below ground surface. The upper horizon consisted of very dark brown/black (10YR 2/1) muck, underlain by light gray depleted (10YR 5/1) fine sandy loam with approximately 5% redoximorphic concentrations. The water table was observed at approximately five inches below ground surface, and water-stained leaves were present.

Vegetation

Vegetation in Wetland Area 4 is dominated by scrub-shrub and herbaceous cover within the ROW limits, and saplings and mature trees in the forested area. Please refer to Table 1 below for dominant vegetation species observed within the wetland.

Memorandum

TABLE 1: Dominant Vegetation in Wetland Area 4

Trees and Saplings				
Scientific	**Common**	**Indicator**	**Upland**	**Wetland**
Acer saccharum	Sugar maple	FACU	X	X
Alnus incana	Speckled alder	FACW	-	X
Fagus grandifolia	American beech	FACU	X	X
Quercus palustris	Pin oak	FACW	X	X
Shrubs / Herbaceous Plants				
Scientific	**Common**	**Indicator**	**Upland**	**Wetland**
Cornus alba	Red-osier dogwood	FACW	X	X
Kalmia angustifolia	Sheep laurel	FAC	X	X
Carex scoparia	Broom sedge	FACW	-	X
Dichanthelium clandestinum	Deer-tongue	FACW	-	X
Dryopteris intermedia	Intermediate wood fern	FAC	X	X
Solidago rugosa	Wrinkle-leaved goldenrod	FAC	-	X

Wetlands

Wetland Area 4 was delineated, based on the above-described wetland indicator characteristics. This wetland area is under the jurisdiction of both the CTDEEP and the USACE based on applicable identification criteria met.

If any questions arise in relation to this memo, please contact me at 860-807-4336.

Sincerely,

Vanesse Hangen Brustlin, Inc.

Sara Berryman, CSS
Wetland Scientist
sberryman@vhb.com

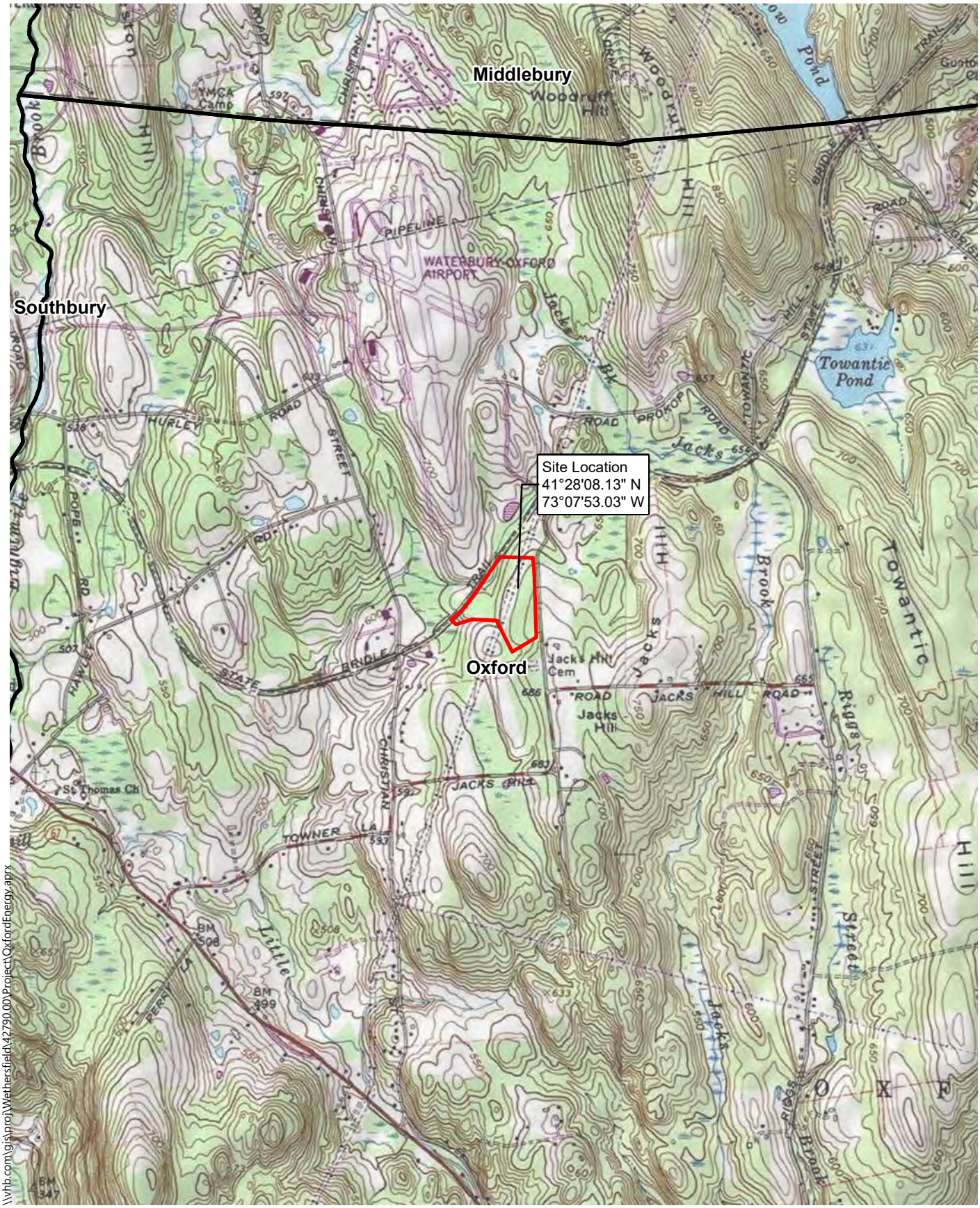
Figure:

Figure 1 – USGS Site Location Map
Figure 2 – Delineated Resources Map

Appendices:

Appendix A – Wetland Delineation Data Sheets

FIGURES



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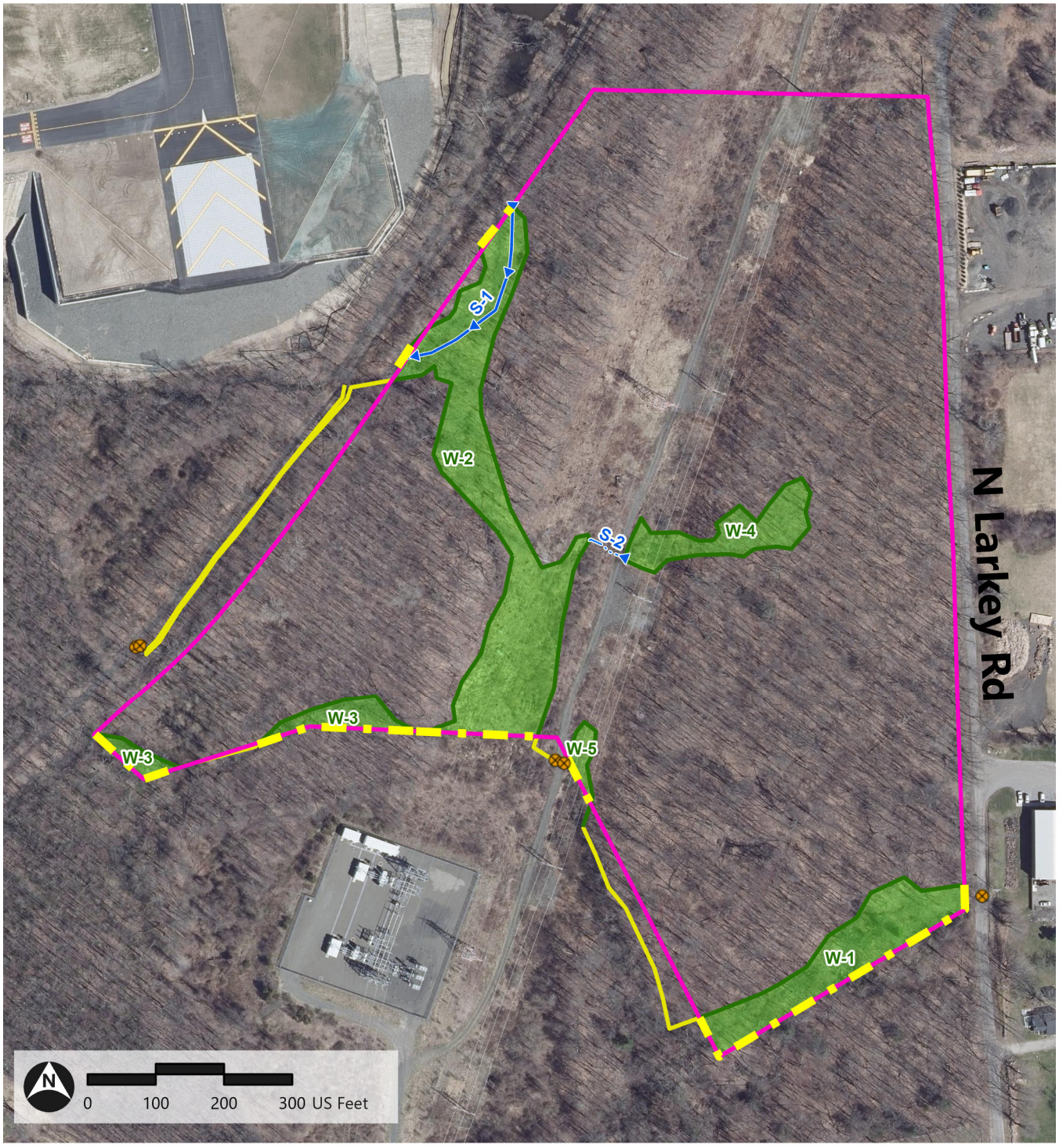
Site B: Oxford Energy Center, LLC | Oxford, Connecticut

USGS Site Location Map

Source: CTDEEEP, VHB, ArcGIS Online

Figure 2: Delineated Resources Map

Oxford Energy Center | Oxford, Connecticut



Study Area

Delineated Wetland Edge (VHB)

Approximate Wetland Locations Offsite (VHB)

Delineated Wetlands (VHB)

Delineated Intermittent Stream (VHB)

Delineated Perennial Stream (VHB)

Feature Continues

Source: CTDEEP, VHB

APPENDIX A

WETLAND DELINEATION DATA SHEETS

Click here you will be redirected to the actual form

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Oxford Energy Center City/County: Oxford, New Haven Sampling Date: 03/20/24

Applicant/Owner: Oxford Energy Center, LLC State: CT Sampling Point: Wet4

Investigator(s): VHB, S. Berryman Section, Township, Range:

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope %: 0-5

Subregion (LRR or MLRA): Lat: 41.46880 Long: -73.13062 Datum:

Soil Map Unit Name: Woodbridge fine sandy loam NWI classification: N/A

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 X 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 X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	If yes, optional Wetland Site ID: W-4, Near Flag No. 14
Wetland Hydrology Present?	Yes X	No ____	

Remarks: (Explain alternative procedures here or in a separate report.)
High water table, soil saturation, redox and depleted matrix present at this location. FAC/FACW Vegetation dominant.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- X Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- X Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 5
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes X No ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: Wet4

Tree Stratum (Plot size: 15)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer saccharinum	30	Y	FACU
2. Quercus palustris	20	Y	FACW
3. Fagus grandifolia	15	Y	FACU
4.			
5.			
6.			
7.			
	65	=Total Cover	
Sapling/Shrub Stratum (Plot size: 5)			
1. Alnus incana	20	Y	FACW
2. Cornus alba	15	Y	FACW
3. Kalmia angustifolia	10	Y	FAC
4.			
5.			
6.			
7.			
	45	=Total Cover	
Herb Stratum (Plot size: 5)			
1. Solidago rugosa	15	Y	FAC
2. Dichanthelium clandestinum	15	Y	FACW
3. Carex scoparia	10	Y	FACW
4. Dryopteris intermedia	10	Y	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	80	x 2 =	160
FAC species	35	x 3 =	105
FACU species	45	x 4 =	180
UPL species	0	x 5 =	0
Column Totals:	160 (A)		445 (B)

Prevalence Index = B/A = 2.78

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 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 vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ___

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

SOIL

Sampling Point Wet4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/1	100					Muck	Saturated, water table at 5"
8-12	10YR 5/1	60	10YR 3/6	5	C	M	Fine sandy loam	Redox concentrations present
	10YR 5/6	35						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- X Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rocky substrate

Depth (inches): 12+ inches

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Soils were saturated at the surface, water table present at five inches. Past 12 inches, a rocky layer prevented further investigation.

June 24, 2021

Ref: 42790.00

Mr. Compton Donohue
Oxford Energy Center, LLC
200 Garrett Street, Suite J
Charlottesville, Virginia 22902

Re: Wetland & Watercourse Delineation Report
Oxford Energy Center, LLC

Dear Mr. Donohue,

At your request, Vanasse Hangen Brustlin, Inc. (VHB) completed an on-site investigation to delineate the limits and extents of wetlands and watercourses on the Oxford Energy Center, LLC site (Herein referred to as, 'Project site' or 'Study Area'). This report includes descriptions of site conditions, including topography, soils onsite, hydrology and vegetation, as well as photographic documentation of conditions onsite (Appendix A), and a Delineated Wetlands Map (Figure 5), displaying the presence/absence of verified onsite.

EVALUATION LIMITS AND DUE DILIGENCE

Prior to visiting the site, VHB performed a desktop review evaluating existing conditions onsite with the U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) soils mapper (Web Soil Survey: Web Soil Survey (Home (usda.gov), CTECO Map Viewer (http://cteco.uconn.edu/viewers/index.htm), and USFWS's National Wetlands Inventory (NWI) and the Connecticut Department of Energy and Environmental Protection (CTDEEP) wetlands data sets.

Topography, Hydrology and Soils

The site is bisected by the utilities right-of-way (ROW) and is bounded by a public recreational walking path to the west, a small residential building and forested area to the north, North Larkey Road to the east and a utility substation and forested area to the south (Figure 1). Topography onsite varies from 680ft on the eastern border, to 620ft on the western border, and 615ft on the southwestern corner (Figure 2). To the east of the ROW, the site gently slopes to the west, which continues to the west of the ROW. However, the northwestern portion of the site concaves into a depression along the public walkway path adjacent to the site, and the southwestern portion of the site quickly slopes into the southwestern corner. Note, the southwestern border of the site

adjacent to the public walkway path consists of a large increase in slope from the walkway grade. This sudden increase in elevation continues north approximately halfway up the site border.

Little River is mapped onsite on the western portion of the site which ultimately drains into the Housatonic River and the Atlantic Ocean. No other watercourse is mapped onsite. The NRCS identified multiple soil units onsite, listed below. Per the NRCS and confirmed onsite, the soil unit definitions for soils onsite are:

Wetland Soils

Ridgebury, Leicester and Whitman Complex (3), stony fine sandy loam

Ridgebury Soils
The Ridgebury complex is a very deep poorly drained soil that includes poorly drained Leicester, and very poorly drained Whitman soils formed in till derived mainly from granite, gneiss and schist. Ridgebury soils on the landscape are in slightly concave areas and shallow drainageways of till uplands with slopes that range from 0-8 percent. Depth to the perched seasonal high-water table from November to May, or longer, is perched above the densic materials. The soils diagnostic horizons include an ochric epipedon (0 to 5 inches (A horizon)), aeric feature 100 percent of the zone from 5 to 9 inches (Bw1 horizon), and a cambic horizon (5 to 18 inches (Bw and Bg horizons)). Densic contact root limiting material begins at 18 inches (Cd). Endosaturation occurs within the zone from 9 to 18 inches and is saturated above the densic contact (Bw2 horizon).

Leicester Soils
The Leicester series consists of very deep, poorly drained loamy soils formed in friable till. They are nearly level or gently sloping soils in drainage ways and low-lying positions on hills. Slope ranges from 0 to 8 percent. Permeability is moderate or moderately rapid in the surface layer and subsoil and moderate to rapid in the substratum. The horizons and features recognized in this pedon are an ochric epipedon in the zone from 1 to 7 inches (A horizon) and a cambic horizon in the zone from 7 to 23 inches (Bg and BC horizons). There is also an aquic moisture regime as indicated by chroma of 2 in Bg horizon but with chroma too high within 30 inches (chroma 3 in BC horizon) to qualify for Typic Endoaquepts. This series also contains an endoadquepts subgroup based on saturation to a depth of 200 cm from the mineral soil surface. There is an aeric great group based on matrix color and a chroma of 3 or more in one subhorizon between the Ap and 75 cm. (BC horizon) and the particle-size class in control section ranges from 10 to 40 inches and is considered coarse loamy type of soil.

Whitman Soils
The Whitman series consists of very deep, very poorly drained soils formed in glacial till derived mainly from granite, gneiss, and schist. They are shallow to a densic contact. These soils are nearly level or gently sloping soils in depressions and drainageways on uplands. Permeability is moderate or moderately rapid in the solum and slow or very slow in the substratum. The diagnostic horizons and features in this pedon include an umbric epipedon in the zone from the soil surface to a depth of 10 inches (Ap horizon) and a cambic horizon in the zone from 10 to 18 inches (Bg horizon). This soil also has aquic conditions as evidenced by a chroma of 1 in the Bg horizon. A densic contact is also present with the root limiting layer beginning at 18 inches. Whitman soils are considered to have a shallow depth class because the depth to the densic contact is less than 20 inches (Cd1 is at 18 inches).

Woodbridge (46B) fine sandy loam
The Woodbridge series consists of moderately well drained loamy soils formed in subglacial till. They are very deep to bedrock and moderately deep to a densic contact. They are nearly level to moderately steep soils on till plains, hills, and drumlins. Slope ranges from 0 to 25 percent. The soils formed in acid till derived mostly from schist, gneiss, and granite. Diagnostic horizons include an ochric epipedon from 0 to 7 inches (Ap horizon), and a cambic horizon from 7 to 30 inches (Bw horizons). Aquic features (low chroma iron depletions) may occur within a 24-inch depth (Bw2 horizon).

Upland Soils

Paxton and Montauk (84B and C) fine sandy loams, varied slopes

The Paxton series consists of well drained loamy soils formed in glacial till. The soils are very deep to bedrock and moderately deep to a densic contact. Paxton soils are nearly level to steep and are on till plains, hills, and drumlins. Slope commonly is 0 to 35 percent but ranges from 0 to 45 percent in some pedons. The soils formed in acid subglacial till derived mostly from schist, gneiss, and granite. Diagnostic horizons and features include an ochric epipedon from 0 to 8 inches (Ap horizon), a cambic horizon from 8 to 26 inches (Bw horizon) and includes dense till material from 26 to 65 inches (Cd horizon).

Wetlands
A portion of Little River flows briefly into the site along the northwestern boundary, which is classified as Riverine Unknown Perennial Unconsolidated Bottom Permanently Flooded (USFWS : R5UBH) (Figure 4) Directly adjacent to the site, a minor Palustrine Forested Broad-leaved Deciduous, Seasonally Flooded/Saturated wetland is mapped at the southwest corner of the site

(PFO1E). The CTDEEP dataset also maps wetlands through the center of the western portion of the site, connecting offsite to the eastern portion of the site, where additional wetlands are mapped.
Field reconnaissance further evaluated the presence/absence of wetlands onsite, discussed below.

Vegetation
The majority of the site is anticipated to be vegetated with deciduous canopy trees based on aerial imagery. The utility right-of-way is anticipated to be scrub-shrub dominate based on aerial imagery. Field reconnaissance further evaluated vegetation onsite, discussed below.

FIELD VERIFIED WETLANDS

VHB performed a site evaluation to determine the presence/absence of wetlands onsite and verify the limits and extents of any resources present on June 1 and June 2, 2021. The evaluation was completed on Parcel No. 25/25/1/BB2, located along North Larkey Road, Oxford, CT. Approximately 0.4in of rainfall fell on May 31, 2021, although normal summer conditions were observed onsite.

In order to reach a positive wetland determination, the U.S. Army Corps of Engineers (USACE) *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* identifies the following required criteria: a dominance of hydrophytic vegetation, soil characteristics, and the presence of wetland hydrology. In addition, the CTDEEP focuses the identification of wetlands on soil characteristics (*Inland Wetlands and Watercourses Act §22a-38 CGS*). Specifically, if soils are poorly, very poorly drained, or alluvial and/or floodplain soils. These criteria are detailed below for uplands and each of the wetland areas field verified onsite.

Please note, as shown on Figure 5, all wetland areas verified by wetland scientists are hydrologically connected, and ultimately are part of one larger, contiguous wetland complex. However, while each portion of the overall wetland onsite are similar, topography and vegetation are not exact matches. Soil characteristics remain similar and near consistent.

As such, please see detailed descriptions of each portion of the wetland complex confirmed onsite:

Wetland Area 1

As shown on Figure 5, a palustrine forested deciduous (PFO6) wetland area (0.60 acres) was identified along the southeastern border of the site.

Topography, Hydrology and Soils
Topography at this wetland location slopes to the south, ranging from 675ft to 665ft. Located on a gentle slope, this depressional wetland did not include a flowing stream channel, but is sourced by a culvert located along North Larkey Road, at the southeastern corner of the site. No flowing

water was observed despite recent heavy rainfall in the region, and although no defined stream channel exists, this wetland area is saturated in ±5-8in of surface water.

As shown in Appendix B, soils at Wetland Area 1 consisted of saturated, poorly drained fine sandy loams. Soils ranged from very dark brown (10YR 2/2) near the surface, and very dark grayish brown (10YR 3/2) to very dark gray (7.5YR 3/1) at 7-14in below ground surface. Throughout the soil sample column, soil samples were heavily saturated with water, and once 14 inches was reached, soils were not discernable. A rocky restrictive layer was encountered after 21-24in. While redoximorphic characteristics were observable, heavy saturation in the soil sample cause poor soil cohesion.

Vegetation
Vegetation within Wetland Area 1 was inclusive of herbaceous cover, shrubs, and forested canopy trees. Reference Table 1 – Dominant Vegetation in Wetland Area 1 for a summary of species identified. Shrubs were not present in this area, with the forest being dominated by mature canopy trees and herbaceous forest floor cover.

TABLE 1: Dominate Vegetation in Wetland Area 1

Trees and Saplings				
Scientific	**Common**	**Indicator**	**Upland**	**Wetland**
Acer rubrum	Red Maple	FAC	-	X
Acer saccharinum	Silver Maple	FAC	-	X
Betula populifolia	Grey Birch	FAC	-	X
Betula alleghaniensis	Yellow Birch	FAC	-	X
Alnus incana	Speckled Alder	FACW	-	X
Carpinus caroliniana	American Hornbeam	FAC	-	X
Fraxinus pennsylvanica	Green Ash	FACW	-	X
Shrubs / Herbaceous Plants				
Scientific	**Common**	**Indicator**	**Upland**	**Wetland**
Symplicarpus foetidus	Skunk Cabbage	OBL	-	X
Onoclea sensibilis	Sensitive Fern	FACW	-	X
Osmundastrum cinnamomeum	Cinnamon Fern	FACW	-	X

Wetlands
Wetland Area 1 was delineated based on the above described wetland indicator characteristics. This wetland area is under the jurisdiction of both the CTDEEP and the USACE based on applicable identification criteria met. This wetland area is a Palustrine Forested Deciduous wetland, dominated by mature canopy trees herbaceous vegetation.

Wetland Area 2
As shown on Figure 5, a wetland area (1.44 acres) was identified along the western portion of the site.

Topography, Hydrology and Soils
Topography at this wetland location slopes from 640ft to 625ft towards to the northwest, continuing offsite to the west. This wetland area is sourced by Little River and a depressional surface water run-off environment.

As shown in Appendix B, soils at Wetland Area 2 remained similar to Wetland Area 1, consisting of saturated, poorly drained fine sandy loams. Sand was present in the upper soil samples, which ultimately ended in a fine muck towards the deeper soil samples. Soils ranged from very dark brown (10YR 2/2) at the surface (0-5in), and very dark gray (10YR 3/1) at 5-11in below ground surface. Brown mottling was observed at 9-14in (7.5YR 4/2) and depleted soils were observed between 14-22in (10YR 4/1). Throughout the soil column, soils were heavily saturated with organics present until 9-10in below ground surface.

Vegetation
Vegetation within Wetland Area 2 was inclusive of herbaceous forest floor cover and forested canopy trees and remained primarily consistent with Wetland Area 1. Shrubs were largely absent and mature canopy trees were spaced apart. Reference Table 1 – Dominate Vegetation in Wetland Area 1 for a summary of species identified. Unlike Wetland Area 1, saplings and herbaceous cover were dominant in Wetland Area 2. Specifically, Skunk Cabbage, Sensitive Fern and Cinnamon Fern, as well as Grey Birch saplings were the dominant vegetation.

Note, snags and felled trees mid-decomposition were also more prevalent in this wetland, specifically along the western border of the site. While present throughout the site, Wetland Area 2 appeared to contain the concentration of such features.

Wetlands
Based on the above described wetland indicator characteristics, Wetland Area 2 was delineated, and field verified. This wetland area is under the jurisdiction of both the CTDEEP and the USACE based on applicable identification criteria met. This wetland area is a Palustrine Forested Deciduous wetland, dominated by saplings and herbaceous vegetation.

Wetland Area 3

As shown on Figure 5, a wetland area (approximately 0.21 acres) was identified along the southwestern border of the site, both of which are anticipated to connect hydrologically offsite.

Topography, Hydrology and Soils

Topography at this wetland location slopes from 640ft to 615ft towards the southwestern corner of the site. This wetland is anticipated to be sourced by depressional surface water run-off. Note, no surface connection between Wetland Area 2 and Wetland Area 3 was observed onsite.

As shown in Appendix B, soils at Wetland Area 3 remained consistent to Wetland Area 2, consisting of saturated, poorly drained fine sandy loams. Restrictive layers were encountered between 13-16in below ground surface, although soils above this depth were heavily saturated, sandy mucky soils. Consistent with Wetland Area 2, soils ranged from very dark brown (10YR 2/2) at the surface (0-9in), and very dark grayish brown (10YR 3/2) at 11-13in below ground surface. Brown mottling was observed at 11-13in (7.5YR 4/2) and depleted soil redoximorphic characteristics were observed in the lower soil samples (10YR 4/1).

Vegetation

Vegetation within Wetland Area 3 was inclusive of herbaceous cover, shrubs and forested canopy trees and remained primarily consistent with Wetland Area 2. Vegetation at this location was dominated by herbaceous vegetation, with snags and felled trees present. Reference Table 1 – Dominate Vegetation in Wetland Area 1 for a summary of species identified. Wetland Area 3 was also noticeably denser with vegetation. The forest floor was not as visible and mature trees were not as spread apart as observed in Wetland Areas 1 and 2.

Wetlands

Wetland Area 3 was delineated, based on the above described wetland indicator characteristics. This wetland area is under the jurisdiction of both the CTDEEP and the USACE based on applicable identification criteria met. This wetland area is a Palustrine Deciduous Emergent Forested wetland, dominated by shrubs and herbaceous vegetation.

Wetland Areas 4 and 5

As shown on Figure 5, two minor wetland areas were identified within the utility right-of-way. Both are gravelly adjacent to the access road and are primarily scrub-shrub. Wetland Area 4 is approximately 0.03 acres, and Wetland Area 5 is approximately 0.06 acres.

Topography, Hydrology and Soils

Topography at these wetland locations are flat, essentially no slope is present. Wetland Area 4 is anticipated to be sourced by stormwater runoff, as a minor drainage pattern was observed flowing

downhill into a man-made gravel ditch. Wetland Area 5 is anticipated to connect with Wetland Area 1 offsite and is connected to Wetland Areas 2 and 3 via a culvert.

As shown in Appendix B, soils at Wetland Area 3 remained consistent to Wetland Area 2, consisting of saturated, poorly drained fine sandy loams. Restrictive layers were encountered between 10-13in below ground surface, likely due to their locations within a utility right-of-way and abutting gravel pad areas. Although soil samples were limited due to the restrictive layer, the upper horizon remained consistent with Wetland Area 2 (0-4in, very dark brown [10YR 2/2]) to very dark grayish brown (10YR 3/2) at 4-10 below ground surface. While limited mottling and redoximorphic characteristics were present, the soil was damp, and water stained leaves were present.

Vegetation
Vegetation within Wetland Areas 4 and 5 differed from the rest of the wetland areas onsite, as these two wetland areas are located within the maintained utilities right-of-way. They are dominated by scrub-shrub vegetation and sapling, as well as herbaceous cover. Mature canopy trees were absent, although some taller trees were observed. Vegetation in the area is considered disturbed due to previous utility development and ongoing maintenance, the probable cause of upland thorny vines appearing within the wetland fringe areas.

TABLE 2: Dominate Vegetation in Wetland Areas 4 and 5

Trees and Saplings				
Scientific	**Common**	**Indicator**	**Upland**	**Wetland**
Betula populifolia	Grey Birch	FAC	-	X
Betula alleghaniensis	Yellow Birch	FAC	-	X
Fraxinus pennsylvanica	Green Ash	FACW	-	X
Shrubs / Herbaceous Plants				
Scientific	**Common**	**Indicator**	**Upland**	**Wetland**
Symplicarpus foetidus	Skunk Cabbage	OBL	-	X
Onoclea sensibilis	Sensitive Fern	FACW	-	X
Athyrium angustum	Northern Lady Fern	FAC	X	-
Rosa multiflora	Multiflora Rose	FACU	X	-
Smilax	Greenbier	FACU	X	-
Juncus effusus	Soft Rush	OBL	-	X

Wetlands

Wetland Areas 4 and 5 were delineated, based on the above described wetland indicator characteristics. These wetland areas are under the jurisdiction of both the CTDEEP and the USACE based on applicable identification criteria met. Wetland Area 5 is anticipated to be under dual jurisdiction, as all USACE criteria are present, and soils are anticipated to be alluvial and subject to periodic flooding. During June site visits, the wetland area included saturation and water flow after heavy rainstorm events. These wetland areas are a Palustrine Scrub-Shrub wetland, although it is anticipated this is due to its maintained nature.

Uplands Onsite

Topography, Hydrology and Soils

Topography in upland portions of the site were flat on the eastern side of the right-of-way and slopped and flat on the western side. As shown in Appendix B, soils within these uplands were primarily well drained, dry, coarse sandy loams with undecomposed vegetation present throughout the majority of the soil samples.

Vegetation

Vegetation within uplands onsite was inclusive of herbaceous cover and mature canopy trees. Portion of the uplands on the eastern and western sides of the utility right-of-way were dominated by Northern Lady Fern and False Lily of the Valley, with mature trees spaced between 20-40ft apart. Reference Table 3 – Dominate Upland Vegetation for a summary of species identified.

TABLE 3: Dominate Upland Vegetation

Trees and Saplings				
Scientific	**Common**	**Indicator**	**Upland**	**Wetland**
Acer rubrum	Red Maple	FAC	-	X
Acer saccharinum	Silver Maple	FAC	-	X
Betula populifolia	Grey Birch	FAC	-	X
Shrubs / Herbaceous Plants				
Scientific	**Common**	**Indicator**	**Upland**	**Wetland**
Maianthemum dilatatum	False Lily of the Valley	FACU	X	-
Athyrium angustum	Northern Lady Fern	FAC	X	-

CONCLUSION

In summary, VHB scientists confirmed the presence of approximately 2.3-acres of Palustrine Forested Deciduous and Palustrine Scrub-Shrub wetlands within the site boundaries on June 1 and June 2, 2021. All wetlands field verified are anticipated to be under dual jurisdiction between the CTDEEP and the USACE. Please refer to Table 4 for the approximate acreage of wetland per Wetland.

TABLE 4: Field Verified Wetlands Onsite

Wetland Area No.	Area (Square Feet)	Area (Acres)	Comments
1	26,346.0	0.60	Palustrine Forested Deciduous
2	62,731.9	1.44	Palustrine Forested Deciduous
3	9,030.5	0.21	Palustrine Forested Deciduous
4	1,277.9	0.03	Palustrine Scrub-Shrub
5	2,556.4	0.06	Palustrine Scrub-Shrub
Total	**101,942.70**	**2.34**	

Please contact me at 860-807-4388 if you have any questions or require additional assistance.

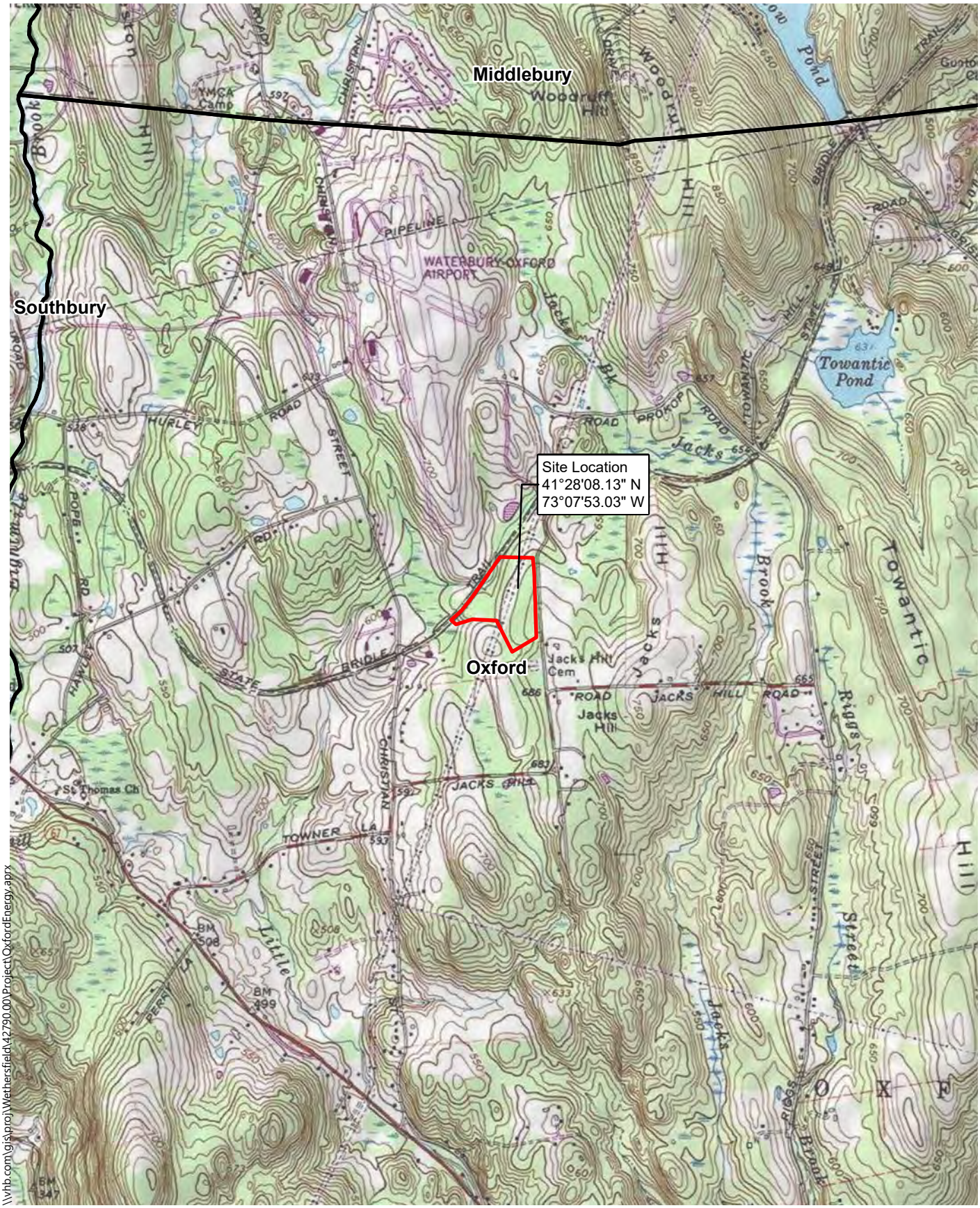
Sincerely,
Vanasse Hangen Brustlin, Inc.

Jeffrey R Shamas, CSS, SPWS, CE
Director of Environmental Services
jshamas@vhb.com

Figure:
- Figure 1 – USGS Site Location Map
- Figure 2 – Site Topography Map
- Figure 3 – NRCS Soils Map
- Figure 4 – NWI and State Wetland Map
- Figure 5 – Delineated Wetlands Map

Appendices:
- Appendix A – Site Photograph Log
- Appendix B – Wetland Delineation Data Sheets

FIGURES



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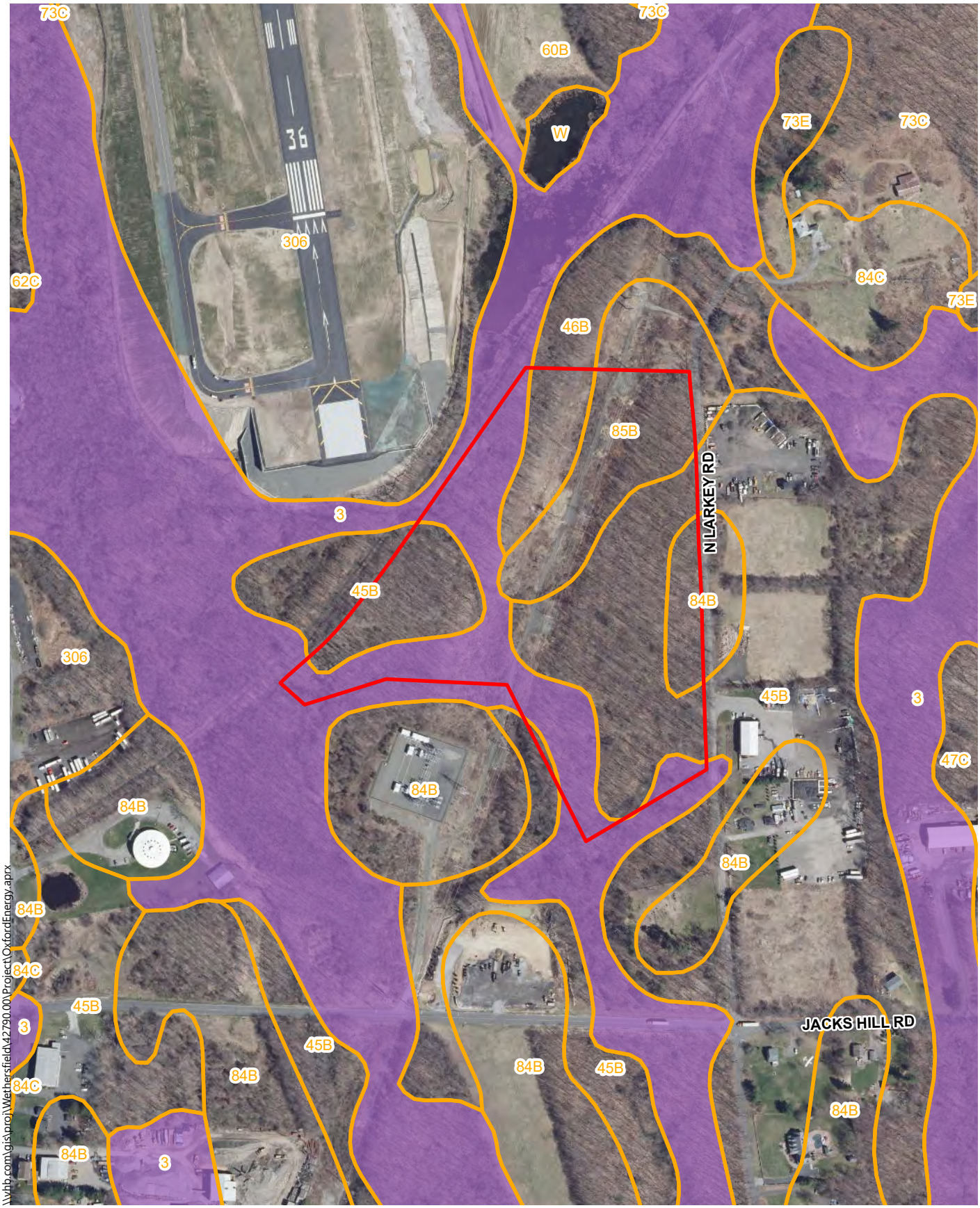
Site B: Oxford Energy Center, LLC | Oxford, Connecticut

USGS Site Location Map

Source: CTDEEEP, VHB, ArcGIS Online



Site B: Oxford Energy Center, LLC | Oxford, Connecticut

NRCS Soils Map

Source: CTDEEEP, VHB, ArcGIS Online

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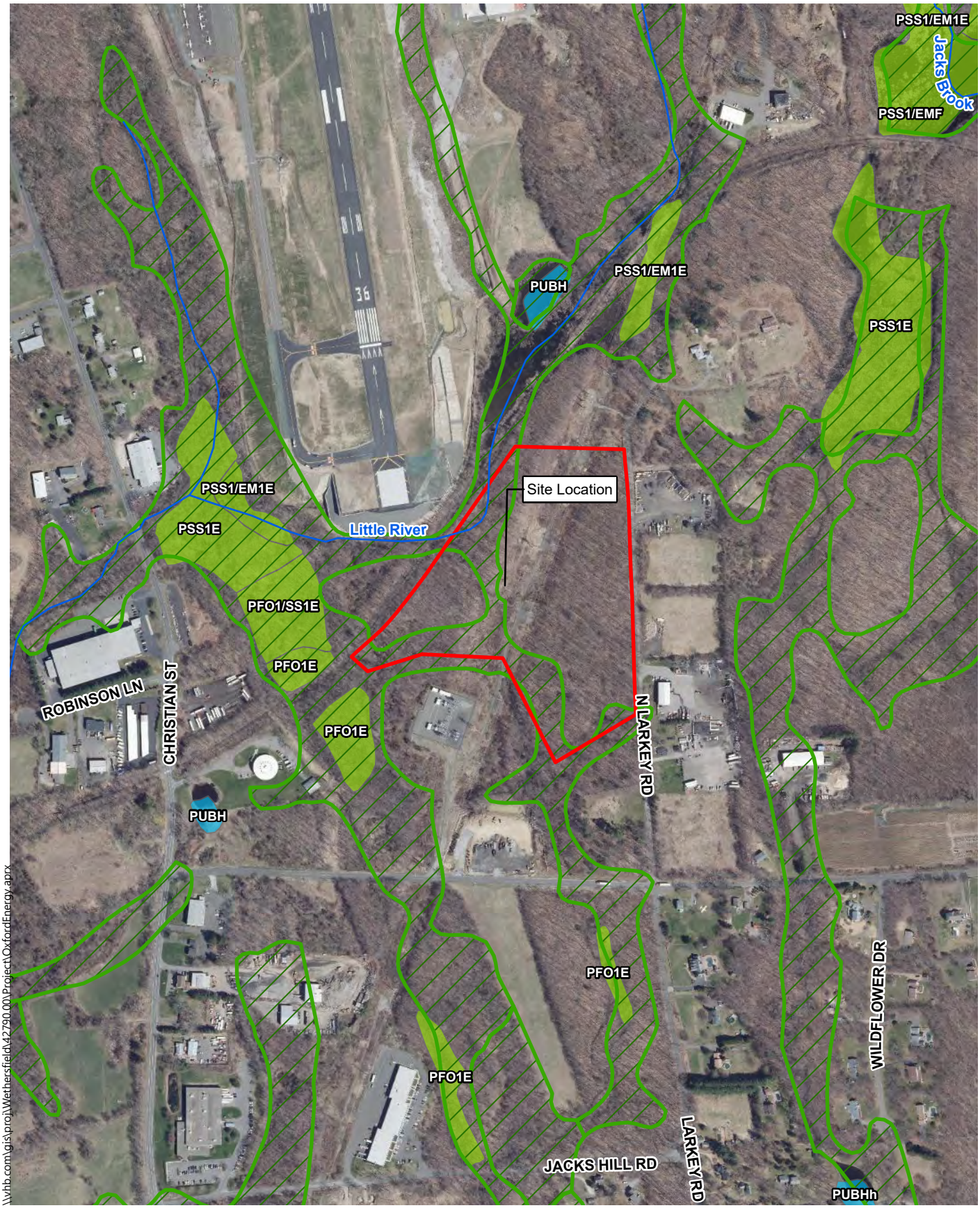
0 125 250 500 Feet

Study Site Boundary
Watecourse
5' Index Contour
1' Contour
Datum: NAVD 88

Site B: Oxford Energy Center, LLC | Oxford, Connecticut

Site Topography Map

Source: CTDEEEP, VHB, ArcGIS Online



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0 300 600 1200 Feet

Site B: Oxford Energy Center, LLC | Oxford, Connecticut

Study Site Boundary

CTDEEP Wetland

Watecourse

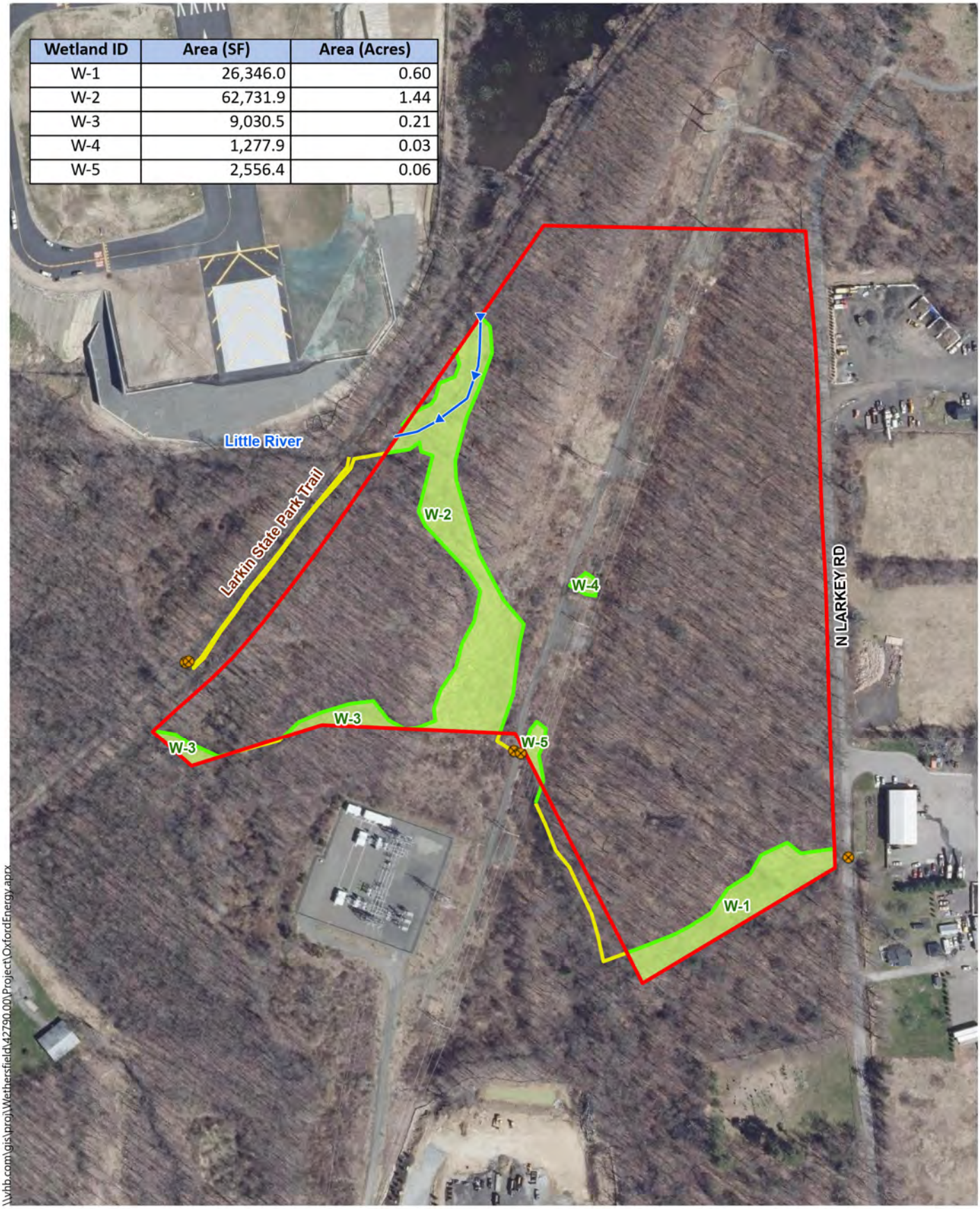
NWI Wetland

Freshwater Forested/Shrub Wetland

Freshwater Pond

NWI and State Wetland Map

Source: CTDEEEP, VHB, ArcGIS Online



Wetland ID	Area (SF)	Area (Acres)
W-1	26,346.0	0.60
W-2	62,731.9	1.44
W-3	9,030.5	0.21
W-4	1,277.9	0.03
W-5	2,556.4	0.06

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0 125 250 500 Feet

Study Site Boundary
Culvert
Delineated Wetland Edge
Approximate Wetland Locations Offsite
Wetland Resource Area

Site B: Oxford Energy Center, LLC | Oxford, Connecticut

Delineated Wetlands Map

Source: CTDEEEP, VHB, ArcGIS Online

Appendix A

Site Photograph Log

vhb Engineers | Scientists | Planners | Designers

PHOTOGRAPHIC LOG

Client Name: Oxford Energy Center, LLC	Site Location: Oxford Energy Center, Site B	Project No: 42790.00

Photo No. 1 | Date: 6/01/2021

Description: View of upland area in the most northeastern portion of the site. Forest floor is primarily clear of vegetation, consisting of fallen leaves, while samplings make up the understory. Mature canopy trees with 10-35 dbh are present.

vhb Engineers | Scientists | Planners | Designers

PHOTOGRAPHIC LOG

Client Name: Oxford Energy Center, LLC	Site Location: Oxford Energy Center, Site B	Project No: 42790.00

Photo No. 2 | Date: 6/01/2021

Description: View of upland area in the north eastern portion of the site, looking east towards North Larkey Road. Upland vegetation and characteristics, including dry leaf forest floor cover, are present.

vhb Engineers | Scientists | Planners | Designers

PHOTOGRAPHIC LOG

Client Name: Oxford Energy Center, LLC	Site Location: Oxford Energy Center, Site B	Project No: 42790.00

Photo No. 3 | Date: 6/01/2021

Description: View of upland area in central eastern portion of the site looking west towards the utility right-of-way. Fern vegetation is dominant, with mature canopy trees spread apart, and decomposing stumps are frequent.

vhb Engineers | Scientists | Planners | Designers

PHOTOGRAPHIC LOG

Client Name: Oxford Energy Center, LLC	Site Location: Oxford Energy Center, Site B	Project No: 42790.00

Photo No. 4 | Date: 6/01/2021

Description: View of Wetland Area 1 near Flag No. 104. Vegetation is dense and buttressing of tree roots was observed.

vhb Engineers | Scientists | Planners | Designers

PHOTOGRAPHIC LOG

Client Name: Oxford Energy Center, LLC	Site Location: Oxford Energy Center, Site B	Project No: 42790.00

Photo No. 5 | Date: 6/01/2021

Description: View of Wetland Area 1 near Flag No. 106. Standing water is visible beneath the dense herbaceous vegetation, and moss lines and water stained leaves were observed. The area is primarily flat.

vhb Engineers | Scientists | Planners | Designers

PHOTOGRAPHIC LOG

Client Name: Oxford Energy Center, LLC	Site Location: Oxford Energy Center, Site B	Project No: 42790.00

Photo No. 6 | Date: 6/01/2021

Description: View of upland area along the eastern portion of the site, along the southern boundary.

vhb Engineers | Scientists | Planners | Designers

PHOTOGRAPHIC LOG

Client Name: Oxford Energy Center, LLC	Site Location: Oxford Energy Center, Site B	Project No: 42790.00

Photo No. 7 | Date: 6/01/2021

Description: View of upland area along the eastern portion of the site near Wetland Area 4.

vhb Engineers | Scientists | Planners | Designers

PHOTOGRAPHIC LOG

Client Name: Oxford Energy Center, LLC | Site Location: Oxford Energy Center, Site B | Project No: 42790.00

Photo No. 8 | Date: 6/02/2021

Description: View of Wetland Area 2 near Flag No. 107. Area is dominated by saplings and herbaceous vegetation.

vhb Engineers | Scientists | Planners | Designers

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No:
Oxford Energy Center, LLC	Oxford Energy Center, Site B	42790.00

Photo No. 9 | Date: 6/02/2021

Description: View of Wetland Area 2 near Flag No. 109. Moss lines and surface water are present.

vhb Engineers | Scientists | Planners | Designers

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No:
Oxford Energy Center, LLC	Oxford Energy Center, Site B	42790.00

Photo No. 10 | Date: 6/02/2021

Description: View of Wetland Area 2 near Flag No. 206. Saturation and standing water are visible

vhb Engineers | Scientists | Planners | Designers

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No:
Oxford Energy Center, LLC	Oxford Energy Center, Site B	42790.00

Photo No. 11 | Date: 6/02/2021

Description: View of Wetland Area 2 near Flag No. 3-110. This portion of the wetland has transitioned into scrub-shrub due to it's location in a maintained right-of-way.

vhb Engineers | Scientists | Planners | Designers

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No:
Oxford Energy Center, LLC	Oxford Energy Center, Site B	42790.00

Photo No. 12 | Date: 6/02/2021

Description: View of Wetland Area 3 near Flag No. 106.

vhb Engineers | Scientists | Planners | Designers

PHOTOGRAPHIC LOG

Client Name:	Oxford Energy Center, LLC	Site Location:	Oxford Energy Center, Site B	Project No:	42790.00

Photo No. 13 | Date: 6/02/2021

Description: View of upland near Wetland Area 3 Flag No. 105.

vhb Engineers | Scientists | Planners | Designers

PHOTOGRAPHIC LOG

Client Name:	Oxford Energy Center, LLC	Site Location:	Oxford Energy Center, Site B	Project No:	42790.00

Photo No. 14 | Date: 6/02/2021

Description: View of Wetland Area 3 near Flag No. 97a.

vhb Engineers | Scientists | Planners | Designers

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No:
Oxford Energy Center, LLC	Oxford Energy Center, Site B	42790.00

Photo No. 15 | Date: 6/02/2021

Description: View of uplands in the western portion of the site.

vhb Engineers | Scientists | Planners | Designers

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No:
Oxford Energy Center, LLC	Oxford Energy Center, Site B	42790.00

Photo No. 16 | Date: 6/02/2021

Description: View of Wetland Area 4, near Flag No. 101. Wetland Area is sourced by a runoff ditch that crosses the gravel utility access road.

vhb Engineers | Scientists | Planners | Designers

PHOTOGRAPHIC LOG

Client Name: Oxford Energy Center, LLC	Site Location: Oxford Energy Center, Site B	Project No: 42790.00

Photo No. 17	Date: 6/02/2021

Description: View of Wetland Area 5, near Flag No. 101. This wetland is sourced by a ditch that is culverted beneath the access road.

Appendix B

Wetland Delineation Data Sheets

Click here you will be redirected to the actual form

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Oxford Energy Center, Site C City/County: Oxford, New Haven Sampling Date: 06/02/21

Applicant/Owner: Oxford Energy Center, LLC State: CT Sampling Point: UPL1

Investigator(s): VHB, A. Loss, E. Olson Section, Township, Range:

Landform (hillside, terrace, etc.): Hillside Local relief (concave, convex, none): None Slope %: 0-5

Subregion (LRR or MLRA): Lat: 41.467637 Long: -73.130458 Datum:

Soil Map Unit Name: Woodbridge NWI classification: N/A

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 X 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	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes	No X	If yes, optional Wetland Site ID:
Wetland Hydrology Present?	Yes	No X	

Remarks: (Explain alternative procedures here or in a separate report.)
Area is an upland area, no wetland characteristics present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ 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)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	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:
Area is an upland environment, no wetland characteristics present.

VEGETATION – Use scientific names of plants.

Sampling Point: UPL1

Tree Stratum (Plot size: 15ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	10	N	FAC
2. Acer saccharinum	10	N	FAC
3. Betula populifolia	10	N	FAC
4. Nyssa sylvatica	10	N	FAC
5.			
6.			
7.			
	40	=Total Cover	

Sapling/Shrub Stratum (Plot size: 5ft)			
1. Betula populifolia	10	N	FAC
2. Quercus alba	10	N	FAC
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	

Herb Stratum (Plot size: 5ft)			
1. Maianthemum dilatatum	15	Y	FACU
2. Athyrium angustum	15	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	=Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	4	x 3 =	12
FACU species	7	x 4 =	28
UPL species	2	x 5 =	10
Column Totals:	13 (A)		50 (B)

Prevalence Index = B/A = 3.84

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 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 vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
Photograph No. 7

SOIL

Sampling Point UPL1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 4/4	100					Fine Loam	
0-12	10YR 3/3	100					Fine Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Oxford Energy Center, Site C City/County: Oxford, New Haven Sampling Date: 06/02/21

Applicant/Owner: Oxford Energy Center, LLC State: CT Sampling Point: UPL2

Investigator(s): VHB, A. Loss, E. Olson Section, Township, Range:

Landform (hillside, terrace, etc.): Hillside Local relief (concave, convex, none): None Slope %: 0-5

Subregion (LRR or MLRA): Lat: 41.468738 Long: -73.132775 Datum:

Soil Map Unit Name: Woodbridge NWI classification: N/A

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 X 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	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes	No X	If yes, optional Wetland Site ID:
Wetland Hydrology Present?	Yes	No X	

Remarks: (Explain alternative procedures here or in a separate report.)
Area is an upland area, no wetland characteristics present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ 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)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	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:
Area is an upland environment, no wetland characteristics present.

VEGETATION – Use scientific names of plants.

Sampling Point: UPL2

Tree Stratum (Plot size: 15ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	10	N	FAC
2. Betula populifolia	10	N	FAC
3. Nyssa sylvatica	10	N	FAC
4.			
5.			
6.			
7.			
	30	=Total Cover	

Sapling/Shrub Stratum (Plot size: 5ft)			
1. Betula populifolia	5	N	FAC
2. Quercus alba	5	N	FAC
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	

Herb Stratum (Plot size: 5ft)			
1. Maianthemum dilatatum	5	N	FACU
2. Athyrium angustum	5	N	FAC
3. Alliaria petiolata	10	Y	FACU
4. Maianthemum canadense	20	Y	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	=Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 9 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1.5 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	6	x 3 =	18
FACU species	3	x 4 =	12
UPL species	0	x 5 =	0
Column Totals:	9 (A)		30 (B)

Prevalence Index = B/A = 3.33

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 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 vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
Photograph No. 14

SOIL

Sampling Point UPL2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	7.5YR 3/2	100					Fine Loam	Soil is dry, no saturation
6-10	7.5YR 3/4	100					Fine Loam	Soil is dry, no saturation
10-15	7.5YR 2.5/3	30					Fine Loam	Soil is dry, no saturation
	7.5YR 3/4	60					Fine Loam	Soil is dry, no saturation

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Oxford Energy Center, Site C City/County: Oxford, New Haven Sampling Date: 06/02/21

Applicant/Owner: Oxford Energy Center, LLC State: CT Sampling Point: Wet1

Investigator(s): VHB, A. Loss, E. Olson Section, Township, Range:

Landform (hillside, terrace, etc.): Hillside Local relief (concave, convex, none): None Slope %: 0-5

Subregion (LRR or MLRA): Lat: 41.467249 Long: -73.129991 Datum:

Soil Map Unit Name: Ridgebury, Leicester, and Whitman NWI classification: N/A

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 X 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 X	No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X	No	If yes, optional Wetland Site ID: W-1, Near Flag No. 104
Wetland Hydrology Present?	Yes X	No	

Remarks: (Explain alternative procedures here or in a separate report.)
Surface water, soil saturation, redox and depleted matrix present at this location. OBL Vegetation dominant.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- Water-Stained Leaves (B9)
- High Water Table (A2)
- Aquatic Fauna (B13)
- X Saturation (A3)
- Marl Deposits (B15)
- X Water Marks (B1)
- Hydrogen Sulfide Odor (C1)
- Sediment Deposits (B2)
- Oxidized Rhizospheres on Living Roots (C3)
- Drift Deposits (B3)
- Presence of Reduced Iron (C4)
- Algal Mat or Crust (B4)
- Recent Iron Reduction in Tilled Soils (C6)
- Iron Deposits (B5)
- X Thin Muck Surface (C7)
- X Inundation Visible on Aerial Imagery (B7)
- Other (Explain in Remarks)
- Sparsely Vegetated Concave Surface (B8)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- X Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No	Depth (inches): 5-8	
Water Table Present?	Yes	No	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches): +10in bgs	**Wetland Hydrology Present?** Yes X No

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: Wet1

Tree Stratum (Plot size: 15)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	5		FAC
2. Acer saccharinum	5		FAC
3. Betula populifolia	5	Y	FAC
4. Betula alleghaniensis	5	Y	FAC
5. Alnus incana	5		FACW
6. Carpinus caroliniana	1		FAC
7. Fraxinus pennsylvanica	5		FACW
	31	=Total Cover	
Sapling/Shrub Stratum (Plot size: 5)			
1. Betula populifolia	5		FAC
2. Betula alleghaniensis	5		FAC
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Herb Stratum (Plot size: 5)			
1. Symplicarpus foetidus	15		OBL
2. Onoclea sensibilis	15		FACW
3. Osmundastrum cinnamomeum	15		FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 10 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	1	x 1 =	1
FACW species	4	x 2 =	8
FAC species	7	x 3 =	21
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	12 (A)		30 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 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 vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

Photograph No. 4

SOIL

Sampling Point: Wet1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 2-2	100					Fine Silty Loam	
7-14	7.5YR 3/1	80	7.5YR 4/1	20			Fine Silty Loam	Saturated
14-21	7.5YR 4/2	60	7.5YR 5/2	10			Fine Clay Loam	Saturated
	7.5YR 3/1	30			C	M	Fine Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- X Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- X Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rocky substrate

Depth (inches): +21-24in

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Overall soils were saturated, although heavy saturation was observed between 10-14in below ground surface. While soil samples were retrievable, saturation caused poor cohesion.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Oxford Energy Center, Site C City/County: Oxford, New Haven Sampling Date: 06/02/21

Applicant/Owner: Oxford Energy Center, LLC State: CT Sampling Point: Wet2

Investigator(s): VHB, A. Loss, E. Olson Section, Township, Range:

Landform (hillside, terrace, etc.): Hillside Local relief (concave, convex, none): None Slope %: 0-5

Subregion (LRR or MLRA): Lat: 41.467249 Long: -73.129991 Datum:

Soil Map Unit Name: Ridgebury, Leicester, and Whitman NWI classification: N/A

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 X 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 X	No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X	No	If yes, optional Wetland Site ID: W-1, Near Flag No. 104
Vetland Hydrology Present?	Yes X	No	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- X Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- X Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No Depth (inches): 5-8

Water Table Present? Yes ___ No ___ Depth (inches): ___

Saturation Present? Yes X No Depth (inches): 9-14 bgs
(includes capillary fringe)

Wetland Hydrology Present? Yes X No

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: Wet2

Tree Stratum (Plot size: 15)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	5		FAC
2. Acer saccharinum	5		FAC
3. Betula populifolia	10	Y	FAC
4. Fraxinus pennsylvanica	5		FACW
5.			
6.			
7.			
	25	=Total Cover	

Sapling/Shrub Stratum (Plot size: 5)			
1. Betula populifolia	20	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	

Herb Stratum (Plot size: 5)			
1. Symplicarpus foetidus	15		OBL
2. Onoclea sensibilis	15		FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	=Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	1	x 1 =	1
FACW species	2	x 2 =	4
FAC species	3	x 3 =	9
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	6 (A)		25 (B)

Prevalence Index = B/A = 2.33

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 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 vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ___

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

Photograph No. 10

SOIL

Sampling Point Wet2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 2/2	100					Sandy Loam	
5-11	10YR 3/1	100					Sandy/Silty Loam	Saturated
11-14	10YR 3/1	80	10YR4/2	20	C	M	Silty Clayey Loam	Saturated
14-20	10YR 4/1	90	10YR 5/3	10	C	M	Silty Clayey Loam	Saturated

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- X Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- X Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks: