October 13, 2022

Peter Parent, PE CHA Consulting Inc. 400 Capital Blvd. Rocky Hill, CT 01067

Re: Soil Scientist Report 94 Plaine Hill Rd, Woodstock, CT 06281

Dear Peter,

Introduction and Description:

On September 23, 2022, the wetland resources were delineated on land located along the western edge of the property, using flag series A-1 to A-19 (refer to enclosed locus maps). The wetland boundary was flagged using the criteria in the most recent edition of the Inland Wetlands and Watercourses Act (IWWA) and US Army Corps of Engineers standards. Hydric soil indicators, vegetation changes, hydrological indicators, and topography were all considered for delineation purposes.

The titles of attached documents are as follows:

- ACOE Delineation Data Sheets
- USGS of Locus Site, Goddard Consulting, LLC, 10/5/2022
- Orthophoto & Soils of Locus Site, Goddard Consulting, LLC, 10/5/2022
- *FEMA Flood Map*, Goddard Consulting, LLC, 10/5/2022
- NDDB Rare Species Map, Goddard Consulting, LLC, 10/5/2022

Inland Wetlands and Watercourses Act & Bylaw:

Inland resource areas were delineated in accordance with relevant federal, state, and local regulations. As stated in the IWWA Sec. 22a-38 and the Town of Woodstock's bylaw, "Wetlands" means land, including submerged land, not regulated pursuant to sections 22a-28 to 22a-35, inclusive, which consists of any soil types designed as poorly drained, very poorly drained, alluvial, and floodplain by the National Cooperative Soils Survey..."

Additionally defined are watercourses, which "…means rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs, and all other bodies of water, natural or artificial, vernal or intermittent, public or private, which are contained within flow through or border upon the Town or any portion thereof not regulated pursuant to sections 22a-28 through 22a-35, inclusive, of the Connecticut General Statutes. Intermittent watercourses shall be delineated by a defined permanent channel and bank and the occurrence of two or more of the following characteristics: (a) evidence of scour or deposits of recent alluvium or detritus, (b) the presence of standing or flowing water for duration longer than a particular storm incident, and (c) the presence of hydrophytic vegetation."

Mapped NRCS Soils:

Based on the State of Connecticut GIS Soil Survey information (see the Orthophoto & Soils Map), the soils in association with the site location primarily include Woodbridge soils with slopes from 3-15%. Other adjacent soil types within the site include Ridgebury fine sandy loam, in the center of the western edge of

the delineated wetlands. The soils upland of the wetland are considered to be Paxton and Montauk fine sandy loams. Brief descriptions of these types of soils are explained below.

<u>Woodbridge soils</u>: These are a fine sandy loam observed within ground moraines, hills, and drumlins. The typical profile of these soils is from 0 to 65 inches, transitioning from fine sandy loam to a gravellier fine sandy loam at its lowest horizon. It's depth to water table is from about 18 to 30 inches, and these soils are moderately well drained.

<u>Ridgebury soils</u>: This type of soil is a fine sandy loam often found within ground moraines, hills, drumlins, depressions, and drainageways. The usual profile for this soil type starts with an organic layer from 0-1 inches, followed by sandy and gravelly sandy loams down to around 66 inches. This soil's depth to water table is about 0 to 6 inches, as they are poorly drained hydric soils.

<u>Paxton and Montauk soils</u>: These soils are fine sandy loams found in ground moraines, drumlins, and hills. The typical profile for these soils is a fine sandy loam texture from 0 to 26 inches, then a more gravelly fine sandy loam in the deepest horizon down to 65 inches. The depth to water table is from about 18 to 39 inches, and these soils are well drained.

Based on the inspection of soils associated with the delineated wetland, the soil types researched appear to be consistent with the larger area however wetland soils on site are more consistent with the poorly drained Whitman soil series as compared to the well drained Woodbridge soils mapped.

On-Site Soils:

Consistent with the NRCS based GIS soil survey, upland soils identified on the property were found to be similar in texture, with mostly loamy sand in the upland region and the wetland soils consisting of mostly silty loam. Within the upland region at flag A-5, the first layer is horizon A from depths of 0 to 11 inches, a fine sandy loam with a matrix of 10YR 5/4. Under this is horizon Bw found between 11 to 20 inches of depth, consisting of a fine sandy loam with a soil matrix of 10YR 4/4.

Wetland soils at this location had an A horizon from 0 to 6 inches of fine sandy loam, with a matrix of 10YR 3/2 and the presence of oxidized rhizomes. From 6 to 14 inches is horizon 2Ab consisting of sandy loam and a matrix of 10YR 2/2 with oxidized rhizomes. Below, from 14 to 16 inches is horizon Bg, a sandy loam with a matrix of 10YR 5/3 and 15% mottling at 10YR 5/6. The last tested horizon is Bg2 from depths of 16 to 20 inches, a sandy loam with a matrix of 10YR 5/2 including both 10% 10YR 5/6 mottling and 10% 5YR 4/3 mottling. Refer to the soils map for visual information about the mapped soils.

Soils were also evaluated at interim points along the delineated boundary, in general the upland areas are consistent with Woodbridge soils. The wetlands had characteristics of poorly drained Ridgebury soils throughout most of the delineated wetland and in the lower topographic regions on site. Several areas of pooling water were noted as well as saturated soils such as near flag A-5.

Site Photos



Figure 1. Developed upland areas



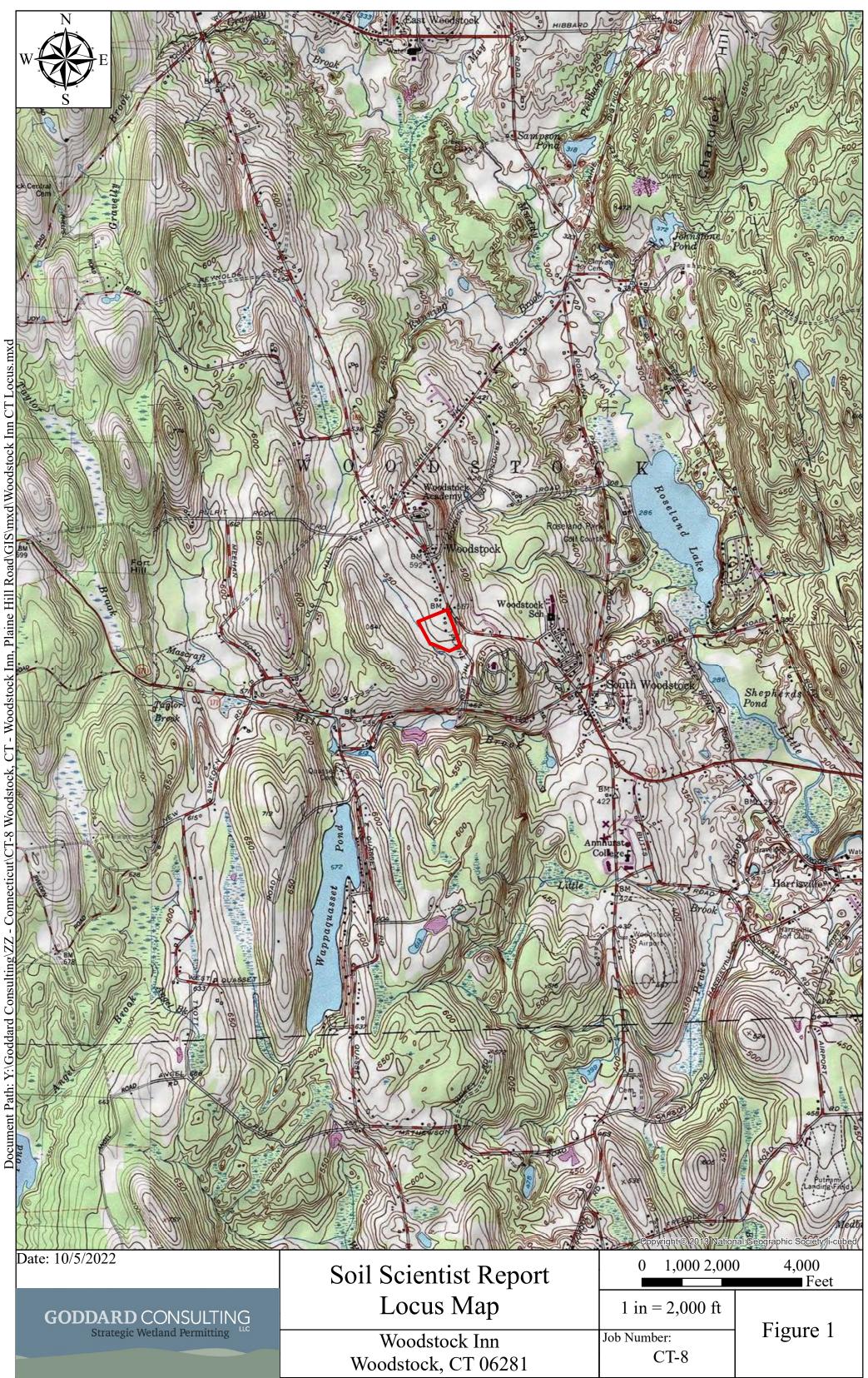
Figure 2. View of a line of phragmites and reed canary grass along the delineated wetland.



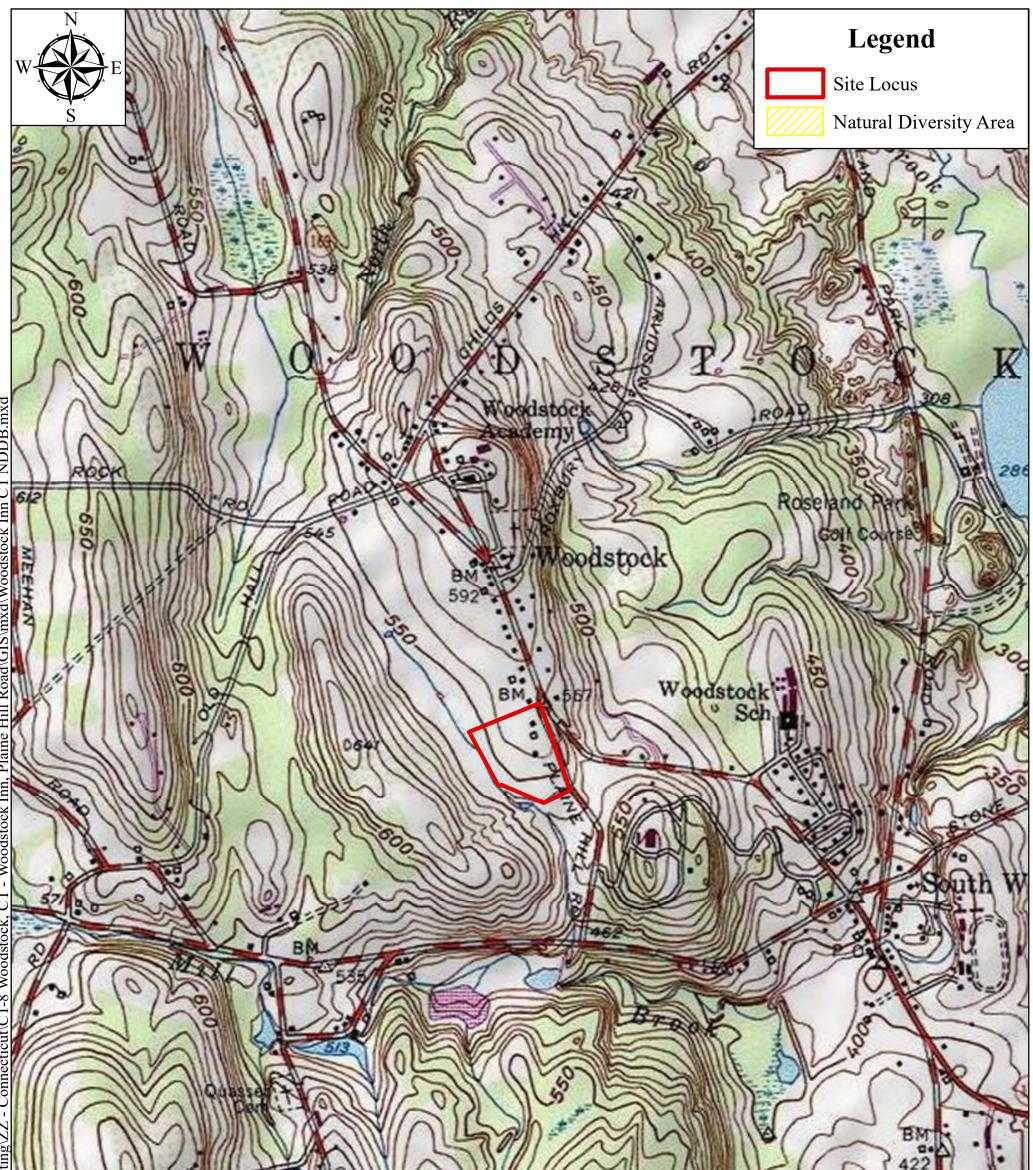
Figure 3. off-site wetland and watercourse leading to pond.



Figure 4. Forested wetland by Flag W-17







CT - Woodstock Inn, Plaine Hill Road/GIS/mxd/Woodstock Inn CT NDDB.mxd Connecticut/CT-8 Woodstock

Document Path: Y:\Goddard Consultin		Copyright@2013 Nation	All Geographic Society, il-cubed
Date: 10/5/2022	Soil Scientist Report	0 500 1,000) 2,000 Feet
GODDARD CONSULTING Strategic Wetland Permitting	Locus Map	1 in = 1,000 ft	
Strategic Wetland Permitting	Woodstock Inn Woodstock, CT 06281	Job Number: CT-8	Figure 3

Vegetation

Wetlands on site were flagged with blue flags labeled A-1 to A-19 to denote the boundary of the wetland.

The A-5 flag wetland is dominant in speckled alder shrubs, and ground cover plants such as reed canary grass, sticky-willy, lamp rush, sensitive fern, and purple-stem American-aster. Though found in less significant amounts, other dominant herbaceous plants within the wetland consist of common boneset, purple loosestrife, and phragmites.

Within the adjacent uplands at A-5, reed canary grass and tall goldenrod are the dominant ground cover vegetation. Other species identified within the herbaceous layer are found to be sticky-willy and purple-stem American-aster in lesser amounts.

Across the larger site, the wetland areas were dominated by similar wet meadow vegetation and red maple and dogwoods where the wetland enters the forested area. The wetlands continue off site bordering on a watercourse that feeds a farm pond. Within the forested wetland areas red maple, dogwood, poison ivy, oriental bittersweet are dominant.

FEMA Flood Zones

The National Flood Hazard Layer provided by the Federal Emergency Management Agency (FEMA) does not have available data in this location.

NDDB

The site is not located in an identified NDDB area, the closet such area is located southeast of the site approximately 8,000 feet away.

Findings

Based on these hydric soil indicators, vegetation, hydrological indicators, and topography, the flagged locations on site were found to be the boundary of wetland. It appears that this wetland is connected to a watercourse to the south that runs along the western edge of the property boundary.

Very truly yours, GODDARD CONSULTING, KLC

Steven Riberdy, MS, PWS, CWB, CE, CERP, PSS Lead Biologist, Soil Scientist and Manager

WETLAND DETERMIN		DATA FOR	M - Northcentra	I and Northeast Region	-		Wetland		
Droiget Site: Weedsteek Inn							Upland		0/22/2022
Project Site: Woodstock Inn				_ City/County: Woodsto				A 5	9/23/2022
Applicant/Owner: 0				State: <u>CT</u>		-	ling Point:		
Investigator(s): <u>Steven Riberdy</u>						-			
Landform (hillslope, terrace, etc.)									
Subregion (LRR or MLRA):				Longitude:				NAD 83	
Soil Map Unit Name:									
Are climatic/hydrologic condition									
Is vegetation Soil									
Is vegetationSoil					(chec	k if ap	propriate)		
Are "Normal Circumstances" pr	esent?	<u> </u>	Yes	No					
SUMMARY OF FIN	NDINGS	- Attach sit	e map showing s	ampling point locations, tr	ransect	s, imp	oortant fea	tures, etc.	
Hydrophytic Vegetation Presen	t?	X Yes	No	la the Sempled Area w	vithin			Yes	
Hydric Soil Present?	_	Yes	X No	Is the Sampled Area v a Wetland?	VILLIILI				
Wetland Hydrology Present?		Yes	X No				Х	No	
Remarks:	-			<u> </u>					
HYDROLOGY									
Wetland Hydrology Indicators									
Primary Indicators (minimum of or Surface Water (A1)	ne is requ	ired; check a		Stained Leaves (B9)		-	<i>ndicators (I</i> ce Soil Crao	Min. 2 Requ	ired)
High Water Table (A2)							age Pattern		
Saturation (A3)				eposits (B15) Moss Trim Lines (B16)					
Water Marks (B1)	2)			en Sulfide Odor (C1) Dry-Season Water Table (C2)			2)		
Sediment Deposits (B2 Drift Deposits (B2)	2)			uck Surface (C7) ce of Reduced Iron (C4)	Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)			erv (C9)	
Algal Mat or Crust (B4))			Iron Reduction in Stunted or Stressed Plants (
Iron Deposits (B5)				Tilled Soils (C6) Geomorphic Position (D2)					
Inundation Visible on A		gery (B7)	Oxidize	Living Poets (C2) Shallow Aquitard (D3)					
Sparsely Vegetated Co Surface (B8)	oncave		Living Roots (C3) Other (Explain in Remarks)			Microtopographic Relief (D4) FAC-Neutral Test (D5)			
Field Observations	Vaa	V No	Donth (inchoo)						Yes
Surface Water Present?	Yes								165
Water Table Present?	Yes						lydrology	X	NL
Saturation Present? (Includes capillary fringe)	Yes	X No	Depth (inches)			Pres	ent?	X	_No
Describe Recorded Data (stream g	gauge, m	onitoring we	ll, aerial photos, p	revious inspections), if availa	able:				
Remarks:									

VEGETATION - Use scientific names				A-17 4/1/2022
Tree Stratum (Plot Size:)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet:
1				No. of Dominant Species That are
2				OBL, FACW, or FAC: 1 (A)
3				Total No. of Dominant Species
4				Across All Strata: <u>2</u> (B)
5				Percent of Dominant Species That
6				are OBL, FACW, or FAC: 50.00 (C
7				Prevalence Index Worksheet:
	=	Total Tree Co	ver	Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot Size:)	Absolute % Cover	Dominant Species	Indicator Status	OBL species <u>3</u> x 1 = <u>3</u>
1				FACW
				species <u>60</u> x 2 = <u>120</u>
2				FAC species x 3 =
3				FACU
				species <u>30</u> x 4 = <u>120</u> UPL
4				species 0 x 5 = 0
5				Column Totals 93 (A) 243 (E
6				
				Prevalence Index = B/A =
7				Hydrophytic Vegetation Indicators:
	=	Total Sapling/		Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot Size:)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test is >50%
1 Reed Canary Grass (Phalaris arundinacea)	60	YES	FACW	<u>X</u> Prevalence Index is $\leq 3.0^1$
2 Tall Goldenrod (Solidago altissima)	20	YES	FACU	Morphological Adaptations ¹
3 Sticky-Willy (Galium aparine)	10	NO	FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
4 Purple-Stem American-Aster (Symphyotrichum puni	3	NO	#N/A	¹ Indicators of hydric soil & wetland hydrology must be presen unless disturbed or problematic
5				Definitions of Vegetation Strata
6				Tree- Woody plants 3 in. (7.6 cm) or more in diameter at
7				breast height (DBH), regardless of height
8				Sapling/shrub - Woody plants less than 3 in. in DBH and greater than 3.28 ft. (1 m) tall.
				Herb - All herbaceous (non-woody) plants, regardless of
9				size, and woody plants < 3.28 ft tall
10				Woody Vines - All woody vines greater than 3.28 ft in height
11				
12				
	93 = Absolute	Total Herb Co Dominant	ver Indicator	Hydrophytic <u>X</u> Yes
Woody Vine Stratum (Plot Size:)	% Cover	Species	Status	Vegetation Present?
1				No
2				
3				
4				
	0 =	Total Woody	/ine Cover	
Remarks: (Include photo numbers here or on a separa 0		Total Woody V	/ine Cover	<u> </u>

SOILS Profile Descr	SOILS A-5 Upland Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)											
Horizon	Depth Matrix Redox Features (in) Color (moist) % Type ¹ Low					Loc ²	Texture	Remarks				
A	0-11	10YR 3/2						FSL				
Bw	11-20	10YR 4/4						FSL				
		0										
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix Hydric Soil Indicators Histosol (A1) Polyvalue Below Surface (S8) 2cm Muck (A10) (LRR K, L, MLRA 149B)												
	Histic Epipeo Black Histic				, MLRA 149 E Surface (S9)	3)		Coast Prairie Redox (A16) (LRR K, L, R) 5cm Mucky Peat or Peat (S3) (LRR K, L, R)				
	Hydrogen St	ulfide (A4)		(LRR R	(LRR R, MLRA 149B)			Dark Surface (S7) (LRR K, L)				
	Stratified La				LOAMY Mucky Mineral (F1) (LRR K, L)				Polyvalue Below Surface (S8) (LRR K, L) Thin Dark Surface (S9) (LRR K, L)			
		low Dark Surface (A11) Surface(A12)			、∟) eyed Matrix (F	2)			ses (F12) (LRR K, L, R)			
		y Mineral (S1)			Depleted Matrix (F3)				Piedmont Floodplain Soils (F19) (MLRA 149B)			
	Sandy Gleye	ed Matrix (S4)		Redox Da	rk Surface (F6)	Mesic Spodic (TA6)	(MLRA 144A, 145, 149B)				
	Sandy Redo	x (S5)		Depleted [Depleted Dark Surface (F7)				Red Parent Material (F21)			
	Stripped Mar			Redox De	Redox Depressions (F8)				Very Shallow Dark Surface (TF12)			
	Dark Surface	e (S7) (LRR R, MLRA 14	9B)					Other (Explain in Rer	narks)			
			hydrology r	nust be present, unless c	listurbed or p	roblematic.						
Restrictive I	Layer (if obse	erved)						Hydri	c Soil Present?			
Туре:				Depth:		inches		Yes	<u> </u>			
Remarks: 0												
US Army Corps of Engineers Northcentral and Northeast Region- Version 2.0												
L									Revised: GZA 09/2014			

WETLAND DETERMINAT	ION DATA FORM	I - Northcentral	and Northeast Region	•		Wetland		
				Upland				
Project Site: Woodstock Inn		City/County: Woodsto						
Applicant/Owner: 0			State: CT			ling Point: A-	.5	-5 ft
Investigator(s): <u>Steven Riberdy</u> , P			Section/Townsh		ge:	0		
Landform (hillslope, terrace, etc.):			ef (concave, convex, none):			Slope (%): <1		
Subregion (LRR or MLRA): NA			Longitude:	0		Datum:		
Soil Map Unit Name:						ssification:		
Are climatic/hydrologic conditions		-						
Is vegetationSoil								
			Naturally Problematic?	(chec	k if ap	opropriate)		
Are "Normal Circumstances" prese	ent? X	Yes	No					
SUMMARY OF FIND	INGS - Attach site	e map showing sa	ampling point locations, tr	ansects	s, imp	ortant feature	es, etc.	
Hydrophytic Vegetation Present?	X Yes	No	Is the Sampled Area v	vithin		<u> </u>	es	
Hydric Soil Present?	X Yes	No	a Wetland?	VILIIII				
Wetland Hydrology Present?	X Yes	No				N	0	
HYDROLOGY Wetland Hydrology Indicators Primary Indicators (minimum of one is	s required; check a	ll that apply)		Secon	ndary i	Indicators (Min	n. 2 Required	4)
X Surface Water (A1)	,	Water-S	Stained Leaves (B9)		Surfa	ce Soil Cracks	(B6)	,
High Water Table (A2) X Saturation (A3)			Fauna (B13) posits (B15)	Drainage Patterns (B10) Moss Trim Lines (B16)				
Water Marks (B1)			en Sulfide Odor (C1)					
Sediment Deposits (B2)			uck Surface (C7)		-	sh Burrows (C		
Drift Deposits (B2) Algal Mat or Crust (B4)			ce of Reduced Iron (C4) Saturation Visible on Aerial Imagery I Iron Reduction in Stunted or Stressed Plants (D1)					
Iron Deposits (B5)		Keceni	Tilled Soils (C6) Geomorphic Position (D2)					
Inundation Visible on Aeri	al Imagery (B7)	Oxidize	ed Rhizospheres on Shallow Aquitard (D3)					
Sparsely Vegetated Conc	ave	Other (Living Roots (C3) Microtopographic Relief (D4) (Explain in Remarks) FAC-Neutral Test (D5)					
Surface (B8)			Explain in Remarks)		FAC-I	veutral Test (L))	
Field Observations								
Surface Water Present?	Yes No	Depth (inches)					Х	Yes
Water Table Present? X	Yes <u>No</u>	Depth (inches)	0	Wetla	and H	lydrology		
	Yes <u>No</u>	Depth (inches)	12"		Pres	ent?		No
(Includes capillary fringe)								
Describe Recorded Data (stream gau	ge, monitoring well	, aerial photos, pre	vious inspections), if availa	ble:				

VEGETATION - Use scientific names				TP-B 10/1/2018
Tree Stratum (Plot Size:)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet:
1				No. of Dominant Species That are
2				OBL, FACW, or FAC: 9 (A)
3				Total No. of Dominant Species
4				Across All Strata: 10 (B)
5				Percent of Dominant Species That
6				are OBL, FACW, or FAC: 90.00 (C
7				Prevalence Index Worksheet:
	<u>0</u> =	Total Tree Co		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot Size:)	Absolute % Cover	Dominant Species	Indicator Status	OBL species <u>23</u> x 1 = <u>23</u>
1 Speckled Alder (Alnus incana)	10	YES	FACW	FACW species 76 x 2 = 152
2				FAC species 3 x 3 = 9
3				FACU
·				species <u>10</u> $x = 40$
4				UPL species x 5 =
5				Column Totals <u>112</u> (A) <u>224</u> (E
6				Prevalence Index = B/A = 2.0
7				Hydrophytic Vegetation Indicators:
·	10 =	Total Sapling/	Shrub Cover	Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot Size:)	Absolute % Cover	Dominant Species	Indicator Status	X Dominance Test is >50%
· · ·				
1 <u>Sticky-Willy (Galium aparine)</u>	10	YES	FACU	X Prevalence Index is ≤3.0 ¹
2 Lamp Rush (Juncus effusus)	10	YES	OBL	Morphological Adaptations ¹
3 Sensitive Fern (Onoclea sensibilis)	10	YES	FACW	Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil & wetland hydrology must be presen
4 Common Boneset (Eupatorium perfoliatum)	3	YES	FACW	unless disturbed or problematic
5 Purple Loosestrife (Lythrum salicaria)	3	YES	OBL	Definitions of Vegetation Strata
6 Purple-Stem American-Aster (Symphyotrichum puni	10	YES	OBL	Tree- Woody plants 3 in. (7.6 cm) or more in diameter a
7 Prairie Wedgescale (Sphenopholis obtusata)	3	YES	FAC	breast height (DBH), regardless of height
8 Common Reed (Phragmites australis)	3	YES	FACW	Sapling/shrub - Woody plants less than 3 in. in DBH an greater than 3.28 ft. (1 m) tall.
9 Reed Canary Grass (Phalaris arundinacea)	50	YES	FACW	Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants < 3.28 ft tall
				Woody Vines - All woody vines greater than 3.28 ft in
10				height
11				
12				
	102 =	Total Herb Co	over	<u> </u>
Woody Vine Stratum (Plot Size: 30')	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Present?
1				No
2				
3				
4				
	0 =	Total Woody	Vine Cover	
Remarks: (Include photo numbers here or on a separa 0	te sheet)			

SOILS Profile Descr	SOILS A-5 Wetland Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)											
Horizon	Depth (in)						Loc ²	Texture	Remarks			
A	0-6	10YR 3/2						FSL	Oxidized Rhizomes			
2Ab	6-14	10YR 2/2						SL	Oxidized Rhizomes			
Bg	14-16	10YR 5/3			15			SL				
Bg2	16-20	10YR 5/2			10			SL	& 10% 5YR 4/3			
		-										
		D=Depletion, RM=Redu	ced Matrix	, CS=Covered or Coated	Sand Grains	. ² Location:	PL=Pore Li	ning, M=Matrix				
Hydric Soil I	Indicators Histosol (A1))		Polyvalue	Below Surface	e (S8)		2cm Muck (A10) (L	.RR K, L, MLRA 149B)			
	Histic Epiped				, MLRA 149			Coast Prairie Redox (A16) (LRR K, L, R)				
	Black Histic				Surface (S9)			5cm Mucky Peat or Peat (S3) (LRR K, L, R)				
	Hydrogen Su	ulfide (A4)		(LRR R	, MLRA 149E	8)		Dark Surface (S7)	(LRR K, L)			
	Stratified Lay	yers (A5)		LOAMY M	ucky Mineral	(F1)		Polyvalue Below Su	urface (S8) (LRR K, L)			
	Depleted Be	low Dark Surface (A11)		(LRR H	(, L)			Thin Dark Surface	(S0) (LRR K, L)			
	Thick Dark S	Surface(A12)		Loamy Gle	eyed Matrix (F	2)		Iron-Manganese Ma	asses (F12) (LRR K, L, R)			
	Sandy Muck	y Mineral (S1)		Depleted M	Matrix (F3)			Piedmont Floodplain Soils (F19) (MLRA 149B)				
	Sandy Gleye	ed Matrix (S4)		Redox Da	rk Surface (F6	5)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)			
	Sandy Redo	x (S5)		Depleted [Dark Surface	(F7)	<u> </u>	Red Parent Material (TF2)				
	Stripped Mat			Redox De	pressions (F8)		Very Shallow Dark Surface (TF12)				
³ Indiantora at		e (S7) (LRR R, MLRA 14		must be present upless a	licturbod or r	roblomatia		Other (Explain in R	emarks)			
	Layer (if obse		nyurology	must be present, unless c		onopiematic.		امردا	ria Cail Dragant?			
Туре:				Depth:		inches		X Yes	ric Soil Present? No			
Remarks:						_						
0												
US Army	Corps of Eng	ineers					1	Northcentral and No	ortheast Region- Version 2.0			
									Revised: GZA 09/2014			