NEW HAMPSHIRE WETLANDS PERMIT APPLICATION FOR THE ANTRIM WIND PARK PROJECT IN ANTRIM, NEW HAMPSHIRE

Submitted to:

NEW HAMPSHIRE SITE EVALUATION COMMITTEE

Submitted by:

Antrim Wind Energy 155 Fleet St. Portsmouth, NH 03801-0065

Prepared by:

TRC

10 Maxwell Drive

Clifton Park, NY 12065

January 2012



	THE STATE OF NU DEPARTMENT OF ENVIR LAND RESOURCE WETLANDS 29 Hazen Drive Concord, NH Phone: (603) 271-2147 bsite: http://des.nh.gov/organization Permit Application Status: http://	RONMENTA S MANAGE S BUREAU e, PO Box 95 03302-0095 Fax: (603) n/divisions/w //des.nh.gov/	AL SERVICES MENT 271-6588 ater/wetlands/inde	<u>1</u>	
				File N	umber:
Administrative	Administrative	Adı	ministrative	Check	No.
Use Only	Use Only		Use Only	Amou	nt:
				Initials	
1. REVIEW TIME AND IMPACT T	YPE: Use Attachment "A" to det	ermine revie	ew time and impa	ct type.	
Expedited Review, Minimum Imp	oact 🔄 Standard Review, M	inimum Impa	ict 🛛 🖾 Stand	dard Revie	ew, Minor or Major Impact
2. PROJECT LOCATION:			I		
ADDRESS: 354 Keene Rd.			TOWN/	CITY: Ant	rim
TAX MAP: 212; 235; 236; 239	BLOCK:		212-27, 30, & 34; 235-14; 236-1 & 2; LOT: 239-1 UNIT:		
LOCATION COORDINATES: N: 203,00	0 ft E: 890,000 ft		Latitude/Longitu	de 🗌 UT	ГМ 🛛 State Plane
3. PROPERTY OWNER INFORM	ATION:	1			
NAME: See attached Exhibit 10.					
EMAIL or FAX:			PHONE:		
			THOME.		
MAILING ADDRESS:					
TOWN/CITY:			STATE:		ZIP CODE:
4. APPLICANT INFORMATION:					
NAME: Antrim Wind Energy, LLC					
EMAIL or FAX: generate@eolian-energ	y.com	PHONE: 60	PHONE: 603-570-4842		
MAILING ADDRESS: 155 Fleet St.					
TOWN/CITY: Portsmouth			STATE: NH		ZIP CODE: 03801-4050
5. AGENT INFORMATION:				I	
NAME: Joshua S. Brown		COMPAN	Y NAME: TRC		
EMAIL or FAX: jsbrown@trcsolutions.co		20.07.01	PHONE: 518	-688-3146	
			1110NL. 310	-000-0140	
MAILING ADDRESS: 10 Maxwell Dr.					
TOWN/CITY: Clifton Park		STATE: NY	Z	IP CODE: 12065	

6. CHECK BOX TO INDICATE APPLICABLE PROJECT TYPES:								
 Excluding culverts and bridges, all work in the bed or bank of a lake/pond of which the property owner(s) listed on page 1 do NOT own the entire bed and banks of the lake/pond. Work in a wetland, stream, river (excluding docks on rivers), prime wetland, prime wetland buffer, tidal water, salt mash, sand dune, tidal buffer zone or in a pond of which the entire bed and banks are owned by the property owner(s) listed on page 1. 								
Dock construction, a RIVER.	 Dock construction, maintenance, repair or replacement on a RIVER. All culvert and bridge construction, maintenance, repair or replacement. 							
7. PROJECT DESC	RIPTION:							
The proposed Antrim Windpark Project is a wind energy generation facility to be located in Antrim, New Hampshire. The project will include construction of ten (10) wind turbine generators, a substation, and associated access roads, crane pads, and stormwater management facilities. The proposed site is generally linear, running approximately north to south along the ridge top of Tuttle Hill and Willard Mountain and spanning several individually owned parcels. The site will be accessed from State Route 9 (Keene Road). Approximately 4.0 miles of gravel road will be constructed. Within the project area, approximately 57.9 acres will be disturbed during construction. Following construction, approximately 46.4 acres will be restored and revegetated including roadway shoulders and side slopes, and much of the construction pad area at the tower locations. Approximately 11.5 acres will remain as permanently developed area including the access road, substation yards, crane pads, and tower foundations.								
8. INDICATE AREA		IMPACTS FOR E	ACH RESOURCE:					
Resource:	Permanent Sq. Ft.	Permanent Lin. Ft.	Temporary Sq. Ft.	Temporary Lin. Ft.	After-the-fact Sq. Ft.	After-the-fact Lin. Ft.		
Forested wetland	5,672	-		-		-		
Scrub-shrub wetland	2,676	-		-		-		
Emergent wetland		-		-		-		
Wet meadow		-		-		-		
Bog		-		-		-		
Prime wetland		-		-		-		
Prime wetland buffer		-		-		-		
Docking structure		-		-		-		
Tidal Buffer Zone		-		-		-		
Tidal water		-		-		-		
Salt Marsh		-		-		-		
Sand dune		-		-		-		
Intermittent Stream	156	156						
Perennial Stream	296	74						
River								
Lake								
Pond								
Other								

Total

8,800

230

9 - 13. IF APPL	CABLE, PROVIDE:					
9. Cubic yards	9. Cubic yards of proposed sand for beach replenishment: NA					
10. Cubic yards	10. Cubic yards of proposed dredge material for surface water dredge: NA					
11. Contributing	watershed size(s) of impacted stream	n(s) and river(s) (acres or square miles): AN	1-29: 1	2.6 ac. A	N-17: 106.4 ac.	
12. U. S. Geolog	ical Survey Topographic Map Waterb	body name: North Branch River				
13. ONLY Required	(a) Straight line distance pin to pin (lin. ft.)	(b) Actual natural navigable shoreline pin to pin (lin	. ft.)		(a) + (b) / 2 = ne Frontage (lin. ft.):	
for docking structures						
14. APPLICAT		((† 222				
Minimum Impac OR -	t, Expedited Review Application: Flat	tee of \$ 200				
	or Major Impact, Standard Review A	pplication: Complete calculation below				
Total temporary an	d permanent impacts:	<u> </u>	х	\$0.20 =	\$1,760	
Temporary Docking	Structure:	0 sq. ft.	х	\$1.00 =	0	
Permanent Dockin) Structure:	0 sq. ft.	х	\$2.00 =	0	
		Projects proposing shoreline structures add	1 \$200	or NA =	<u>NA</u>	
				Total =	<u>\$1,760</u>	
	The Application Fe	ee is above calculated Total or \$200, whichev	/er is g	greater =	\$1,760	
15. INDICATE R	ELATED FILE / APPROVAL NO. AN	ID STATUS:				
Existing Wetlands	Bureau file no. this application is repla	acing:				
Wetlands Bureau e	nforcement (subject and abutting prop	perties):				
Wetlands Bureau e	mergency authorization (subject prop	erty):				
Wetlands Bureau o	enials (subject and abutting properties	s):				
Wetlands Bureau v	ithdrawals (subject and abutting prop	perties):				
Wetlands Bureau a	pprovals (subject and abutting proper	rties):				
Shoreland Program	waiver or permit:					
Alteration of Terrain Bureau: pending; submitted 1/31/12						
Watershed Management Program:						
	s Bureau:					
Subsurface System						
	rams and Bureaus:					
	rams and Bureaus:					
Other NHDES Prog	rams and Bureaus: atural Heritage Bureau; file #NHB10	D-0644				
Other NHDES Prog		D-0644				

16. THE SUBMITTED APPLICATION WILL BE RETURNED TO YOU IF THE FOLLOWING INFORMATION IS NOT PROVIDED:

- A. Attach application fee, check or money order payable to the NH DES Wetlands Bureau (RSA 482-A:3,I & Env-Wt 505.01(c)) (EX. 1)
- B. Applicant and Town Clerk signatures, numbers 19 and 23 on pages 5 and 6 of this form (Env-Wt 501.01(d)&(e) & 505.01(m)&(o))
- C. Narrative description of the proposed project, number 7 on page 2 of this form (Env-Wt 501.02(a) & 505.01(l))
- D. Documentation from Department of Resources and Economic Development's Natural Heritage Bureau (NHB) indicating that NHB has reviewed your project. Documentation can be obtained online at: <u>https://www2.des.state.nh.us/nhbdatacheck/</u> or by phone (603) 271-2215 x 323. Please attach the REQUIRED letter/memo and map provided by NHB. (EX. 2)
- E. Attach a U. S. Geological Survey topographic map upon which the property lines and project limits have been outlined. The map must be at an <u>unaltered</u> scale of 1:24,000 or 1" = 2,000 feet (1:25,000 metric map). (Env-Wt 501.02(a)(4) & 505.01(g)) (EX. 3)
- F. Attach a legible copy or tracing of the tax map from the municipal office (Env-Wt 501.02(a)(1)& 505.01(e)) (EX. 4)
- G. Attach legible and labeled color photographs clearly depicting the jurisdictional areas to be impacted, the resource outside of impact area, any shoreline structures and culvert inlet/outlets (Env-Wt 501.02(a)(3) & 505.01(i)) (EX. 5 & EX. 6)
- H. Attach overview, cross-section and profile plans as applicable (Env-Wt 501.02(a)(2) & 505.01(h)) (See App. 7A of SEC Application)

17A.	INFORMATION REQUIRED FOR COMPLETION OF TECHNICAL REVIEW FOR ALL PROJECTS:
🖾 A.	Is the project within a 1/4 mile of a designated river? http://des.nh.gov/organization/divisions/water/wmb/rivers/desigriv.htm
	□ Y ⊠ N. If yes: 1. Indicate river:
	2. As required by RSA 482-A:3,I(d)(2), I have notified the Local River Advisory Committee (<u>http://des.nh.gov/organization/divisions/water/wmb/rivers/lac/index.htm</u>) by sending a copy of the complete application and supporting materials via certified mail on: Day: Month: Year:
	3. Attach a copy of the certified mail receipt with your application submittal (RSA 482-A:3,I(d)(2))
⊠В.	Attach a completed U.S. Army Corps of Engineers New Hampshire Programmatic General Permit (PGP) Appendix B – Required Information and Corps Secondary Impact Checklist (Attachment B). <i>(EX. 7)</i>
⊠ C.	Does the project require compensatory mitigation pursuant to Env-Wt 302.03? Y N If yes , attach materials outlined in AND a completed Mitigation Agreement Form (Env-Wt 501.02(a)(6) & 501.06) Link: <u>http://des.nh.gov/organization/commissioner/pip/forms/wetlands/documents/mitigation_form.doc</u>
⊠ D.	Attach a copy or tracing of the town tax map showing the property of the applicant, the location of the proposed project on the property, and the location of properties of abutters with each lot labeled with the abutter's name(s) and mailing address(es); or a list of abutters' names and mailing addresses to cross-reference with the tax map (Env-Wt 501.02(a)(1)& 505.01(f)). Abutter Notification Exceptions see Env-Wt 501.01(c) (EX. 4)
🖾 E.	Attach a construction sequence (Env-Wt 501.02(a)(5) & 505.01) (EX. 8)
🛛 F.	Is/are (a) waiver(s) to wetland rules being requested? $\Box Y \boxtimes N$ If yes, attach the waiver request(s) as outlined in Env-Wt 204
⊠ G.	All stream/river crossing projects, attach a response to Env-Wt 904.01, General Design Considerations (except single family residential access for Tier 1 and Tier 2 crossings pursuant to Env-Wt 303.04(z) & 901.03(e)) (EX. 9)
⊠ Н.	If the applicant is not the property owner, attach a written letter of permission from the property owner granting the applicant permission to act on their behalf (EX. 10)
⊠ I.	Will impacts occur within 20 feet of an abutting property line or imaginary extension thereof over surface water? $\Box Y \boxtimes N$ If yes, attach the signed permission letter(s) from the affected abutters (Env-Wt 304.04). This letter must be notarized if your project is a boat docking facility (RSA 482-A:3-XIII(c))
17B.	INFORMATION REQUIRED FOR COMPLETION OF TECHNICAL REVIEW FOR MINIMUM IMPACT PROJECTS:
□ J.	Refer to Attachment A: Determination for Project Impact Classification & Review Time, Section 2: Minimum Impact Project Requirements, and indicate the letter for the Minimum Impact rule that describes your project: Env-Wt 303.04
□к.	Attach required pages from Attachment A: Determination for Project Impact Classification & Review Time, as instructed on the attachment.
🗌 L.	Attach a statement demonstrating need for the proposed project (Pursuant to Env-Wt 302.03)
□ M.	Attach a statement demonstrating that the proposal is the alternative with the least adverse impact to areas and environments under the department's jurisdiction in accordance with Env-Wt 302.03. (Env-Wt 505.01(d)&(y)).
17C.	INFORMATION REQUIRED FOR COMPLETION OF TECHNICAL REVIEW FOR MINOR AND MAJOR IMPACT PROJECTS:
🛛 N.	Attach a response to questions outlined in Env-Wt 302.04(a) (EX. 11)
⊠ O.	Attach a vernal pool survey and report (Env-Wt 302.04(a)) <i>(EX. 6)</i>
🛛 Р.	If a wetland delineation is required, provide a NH Certified Wetland Scientist Stamp on attached plans (Env-Wt 301.01)

Minimum	Env-Wt 505.01
Minor and Major	Env-Wt 501.02
	Env-Wt 304.09(c)
Vegetative & riprap bank stabilization (river, stream, lake, pond)	Env-Wt 404.03 & 404.04
Retaining Walls	Env-Wt 404.05
Shoreline	Env-Wt 501.02(c)
🔲 Tidal	Env-Wt 501.02(b)
Protected Shoreland (SWQP)	Env-Wt 501.02(d)
New Tier 1 Stream Crossing (Exempt: Env-Wt 303.04(z))	Env-Wt 903.03(a) & 904.01
Tier 1 stream crossing or replacement	Env-Wt 903.03(a) & 904.01
New Tier 2 stream crossing (Exempt: Env-Wt 303.04(z))	Env-Wt 903.03(a), 904.01, 904.03 (e), 904.03(f)
Tier 2 stream crossing repair or replacement	Env-Wt 903.03(a), 904.01, 904.03 (e), 904.03(f)
All Tier 3 Stream Crossings	Env-Wt 903.03 (a) & (b) , 904.01, 904.04(d), 904.04(g), 904.05
Wetland Rules Link: http://des.nh.gov/organization/commissioner/legal	/rules/documents/env-wt100-900.pdf

By signing the application, I am certifying that:

- 1. All abutters have been identified in accordance with RSA 482-A:3, I and Env-Wt 100-900.
- 2. I have read and provided the required information outlined in Env-Wt 302.04 for the applicable project type.
- 3. I have read and understand Env-Wt 302.03 and have chosen the least impacting alternative.
- Any structure that I am proposing to repair/replace was either previously permitted by the Wetlands Bureau or would be considered grandfathered per Env-Wt 101.44.
- 5. I have submitted a copy of the application materials to the NH State Historic Preservation Officer.
- 6. I authorize the municipal conservation commission to inspect the site of the proposed project.
- 7. I have reviewed the information being submitted and that to the best of my knowledge the information is true and accurate.
- 8. I understand that the willful submission of falsified or misrepresented information to the New Hampshire Department of Environmental Services is a criminal act, which may result in legal action.
- 9. I am aware that the work I am proposing may require additional state, local or federal permits.
- 10. The mailing addresses I have provided are up to date and appropriate for receipt of DES correspondence. DES will not forward returned mail.

Signature of Applicant

B. Kenusithy Print name legibly

Date

Signature of Authorized Agent (if applicable)

Print name legibly

Date

20. ELECTRONIC COMMUNICATION:

By initialing here, I the applicant or authorized agent in accordance with RSA 482-A:3, XIV (b), hereby authorize DES to communicate all matters relative to this application electronically with the individual's email addresses provided on pg. 1 of the application:

Wetlands Permit Application - 01/01/2012

21. CONSERVATION COMMISSION SIGNATURE REQUIRED FOR EXPEDITED APPLICATIONS ONLY:

Expedited Applications ONLY require that the Conservation Commission signature is obtained prior to submitting the final application to the Town/City Clerk for signature and mailing to the NHDES Wetlands Bureau. *The Conservation Commission is not required to sign. If the Conservation Commission does not sign this statement for any reason, then the application is not eligible for expedited review and shall be reviewed in the standard review time.*

The signature below certifies that the municipal conservation commission has reviewed this application, and: 1) waives its right to intervene per RSA 482-A:11; 2) believes that the application and submitted plans accurately represent the proposed project; and 3) has no objection to permitting the proposed work.

Authorized Commission Signature

Print name legibly

Date

22. APPLICATION SUBMITTAL:

APPLICANT:

- 1. If sought, obtain the Conservation Commissions signature as outlined above on this page, no. 21;
- 2. Submit the original application form and materials, four copies, application fee check and any required municipal fees (authorized by RSA 482-A:3,I) to the town/city clerk.

TOWN/CITY CLERK:

Per RSA 482-A:3,I(d):

- 1. Collect from the applicant the postal receipts demonstrating that all abutters and the Local Advisory Committee were sent proper notice;
- 2. Immediately sign the original application and four copies in the signature space provided on this pg. no. 23 below;
- 3. Retain one copy of the application form and all attachments that will remain with the town/city clerk and will be made reasonably accessible to the public;
- 4. Immediately distribute a copy of the application with attachments to the municipal Conservation Commission, the local governing body (Board of Selectmen or Town/City Council), and the Planning Board in accordance with RSA 482-A:3, I; and
- 5. IMMEDIATELY send the original application materials and filing fee, by CERTIFIED MAIL to the NHDES Wetlands Bureau at the address indicated on the front of this application.

23. TOWN/CITY CLERK SIGNATURE REQUIRED FOR ALL APPLICATIONS:

I hereby certify that the applicant has filed five application forms, five detailed plans, and five USGS location maps with the town/city indicated below. As required by Chapter 482-A:3 (amended 1991), and I have received and retained certified postal receipts (or copies) for all abutters identified by the applicant.

Town/City

Signature or Town/City Clerk

Print name legibly

Date

SECTION 1 - QUESTIONS:

Please check yes or no in response to the following questions. Does the project?

All:			
1.	Impact areas in or within 100 feet of a designated prime wetland (Env-Wt 303.02(f))? Link: <u>http://des.nh.gov/organization/divisions/water/wetlands/prime_wetlands.htm</u>	□Yes 🛛	No
2.	The Natural Heritage Bureau (NHB) report identified a positive result for an exemplary natural community tracked as rare by NHB AND the required additional communication with NHB has confirmed that the project will impact the identified community (Env-Wt 303.02 (k))? Link: <u>https://www2.des.state.nh.us/nhb_datacheck/</u>	□Yes 🛛	No
3.	The NHB report identified a positive result for a species tracked as rare by NHB <u>AND</u> the required additional communication with the NH Fish and Game Department or the US Fish and Wildlife Service has confirmed that the project will impact identified species (Env-Wt 303.02 (k))? Link: <u>https://www2.des.state.nh.us/nhb_datacheck/</u>	□Yes 🛛	No
Fresh	water Wetlands:		
4.	 Involve temporary and/or permanent impacts of more than 3,000 square feet in a swamp or wet meadow (Env-Wt 303.04(f)), except for work that complies with rules: a. Env-Wt 303.04(p), construction of a pond; b. Env-Wt 303.04(j), projects within a public road right-of-way; c. Env-Wt 303.04(k), maintenance dredging; d. Env-Wt 303.04(ae), installation of residential utility lines; or e. Env-Wt 303.04(t), state or federal agency supervised and supported restoration? * See pgs. 4 – 9 for referenced Minimum Impact Rules. 	⊠Yes □	No
5.	 Involve ANY temporary and/or permanent impacts to wetland types other than swamps or wet meadows, except for work that complies with: a. Env-Wt 303.04(t), state or federal agency supervised and supported restoration? * See pgs. 4 – 9 for referenced Minimum Impact Rules. 	∐Yes ⊠	No
Lakes	and Ponds:		
6.	Involve removal of rock, gravel, sand, mud or other material from public waters (Env-Wt 303.03(g))?	□Yes 🛛	No
7.	Disturb 50 or more linear feet, as measured along the shoreline of a lake or pond or its bank (Env-Wt 303.03(k))?	□Yes 🛛	No
Shore	line Structures:		
8.	Involve construction or modification of a permanent dock that is not in-kind repair or replacement?	□Yes 🛛	No
9.	Involve construction or modification of a docking system that provides more than 2 boat slips, including those previously existing and proposed?	□Yes 🛛	No
10.	Involve construction or modification of any dock adjacent or attached to a breakwater?	□Yes 🛛	No
11.	Involve installation of new tie-off piles, ice clusters, or dolphins which do, by their presence, add boat slips to an existing docking system (Env-Wt 303.03(m))?	□Yes 🛛	No
12.	Involve construction of a new breakwater in public waters (Env-Wt 303.02(j))?	□Yes 🛛	No

Tidal:			
13.	Involve ANY work within 50 feet of a salt marsh (Env-Wt 303.03(b))?	□Yes	🛛 No
14.	 Involve: Work in sand dunes; Work in tidal wetlands (Env-Wt 303.02(a)); or Work within 100 feet of the highest observable tide line that will alter any bank, flat, wetlands, surface water, or undeveloped uplands (Env-Wt 303.02(b)). Except for repair to existing structure that complies with: a. Env-Wt 303.04(v), in-kind maintenance, repair or replacement; or b. Env-Wt 303.04(t), state or federal agency supervised and supported restoration? * See pgs. 4 – 9 for referenced Minimum Impact Rules. 	□Yes	⊠ No
Non-0	Crossing Stream Impacts:		
15.	Impact greater than 50 linear feet of intermittent stream or perennial stream bed or bank NOT for installation of a crossing structure, such as a culvert or bridge (Env-Wt 303.03(I))?	□Yes	🖾 No
Strea	m Crossings:		
16.	 Propose a new or replacement crossing on a stream: a. Within a Designated River Corridor http://des.nh.gov/organization/divisions/water/wmb/rivers/desigriv.htm; b. On a watercourse that is listed on the surface water assessment 305(b) report in effect at the time of application as not attaining surface water quality standards for aquatic life based on one or more of the following: Benthic macroinvertebrate index of biological integrity; Fish assemblage index of biological integrity; Habitat assessment; or stream channel stability http://des.nh.gov/organization/divisions/water/wmb/swqa/2010/documents/all_im_paired_waters_20100610.pdf; or c. Within a 100-year flood plain or fluvial erosion hazard zone http://www.fema.gov/hazard/map/firm.shtm? 	□Yes	⊠ No
17.	Propose a new or replacement Tier 3 stream crossing (Env-Wt 303.02(p))?	□Yes	🖾 No
18.	Propose a new Tier 2 stream crossing that is NOT a stream crossing for access to a property for a single-family residential property or building lot, for noncommercial recreational purposes including conservation projects, or for normal agricultural operations, conducted in accordance with Env-Wt 303.04(z)? * See pgs. 4 – 9 for referenced Minimum Impact Rules.	□Yes	🖾 No
19.	 Propose a Tier 1 or Tier 2 stream crossing repair or replacement that: a. Does not meet the General Criteria specified in Env-Wt 904.01 <u>http://des.nh.gov/organization/commissioner/legal/rules/documents/env-wt100-900.pdf;</u> b. Diminishes the hydraulic capacity of the crossing; c. Diminishes the accommodation of aquatic species passage; or d. Is not for Minimum impact stream crossings for access to a property for a single-family residential property or building lot, for noncommercial recreational purposes including conservation projects, or for normal agricultural operations, conducted in accordance with Env-Wt 303.04(z) or (ag)? * See pgs. 4 – 9 for referenced Minimum Impact Rules. 	□Yes	⊠ No
20.	Propose an Alternative Design per Env-Wt 904.04 for a new Tier 1 or Tier 2 stream crossing that is NOT a stream crossing for access to a property for a single-family residential property or building lot, for noncommercial recreational purposes including conservation projects, or for normal agricultural operations, conducted in accordance with Env-Wt 303.04(z) or (ag)? * See pgs. 4 – 9 for referenced Minimum Impact Rules.	□Yes	⊠ No

EXHIBIT 1

COPY OF APPLICATION CHECK

					1146
Antrim Wind Energy LLC 155 Fleet Street Portsmouth, NH 03801 (603) 570-4842		TD BANK America's Most Convenient Bank 54-7-114		1/27/2012	že
TO THE ORDER OF Treasurer State of New Hampsh	ire		\$	**13,250.00	LARS
Thirteen Thousand Two Hundred Fifty and State of New Hampshire Treasury 25 Capitol Street, Room 121 Concord, NH 03301 MEMO AOT Permit Fee - Antrim Wind		the for			
Antrim Wind Energy LLC					1146
Treasurer State of New Hampshire	AOT Permit Fee	1/27	/2012	13, <mark>2</mark> 50.0	
TD Bank Business Ch AOT Permit Fee	Antrim Wind			13,250.0	0
Antrim Wind Energy LLC					1146
Treasurer State of New Hampshire	AOT Permit Fee	1/27	/2012	13,250.0	0

TD Bank Business Ch AOT Permit Fee - Antrim Wind

13,250.00

PRINTED IN U.S.A.

00

EXHIBIT 2

NEW HAMPSHIRE NATURAL HERITAGE BUREAU LETTER OF 8/3/11



NEW HAMPSHIRE NATURAL HERITAGE BUREAU

DRED - Division of Forests & Lands PO Box 1856 -- 172 Pembroke Road, Concord, NH 03302-1856 (603) 271-2214

To:	Josh Brown, TRC Solutions
From:	Melissa Coppola, NHB-Environmental Information Specialist
Date:	August 3, 2011
Subject:	Antrim Rare Plant Surveys

Thanks for sending the natural community mapping for the proposed Antrim Wind Site. We recommend that you reconsider the classification of the area currently mapped as *high elevation spruce fir forest*. This community is known to occur from 2500 to 4000 feet elevation, well above the elevation of this site.

Based on the information provided we suggest targeting the following rare plant species in the communities listed below.

- rich red oak rocky woods

 sickle-pod (Boechera canadensis)
 smooth rock cress (Boechera laevigata)
 Carolina cranesbill (Geranium carolinianum)
 climbing fumitory (Adlumia fungosa)
- *hemlock beech oak pine forest* small whorled pogonia (*Isotria medeoloides*)
 - *red oak pine rocky ridge* Douglas' knotweed (*Polygonum douglasii*) Smooth sandwort (*Minuartia glabra*)
- *red spruce swamp* green adder's mouth (*Malaxis unifolia*)

Should you have any further questions, contact me at 603-271-2215 ext. 323 or at Melissa.Coppola@dred.state.nh.us.

Memo



To: James Kenworthy, Eolian Renewable Energy, LLC 55 Fleet St. Portsmouth, NH 03801

From: Melissa Coppola, NH Natural Heritage Bureau

- Date: 3/22/2010 (valid for one year from this date)Re: Review by NH Natural Heritage Bureau
 - NHB File ID: NHB10-0644 Project type: Roads, Driveways, Bridges: Road construction, etc.

Town: Antrim Location: Tax Maps: 212-030, 212-027, 212-034, 211-004, 235-014

cc[.] Kim Tuttle

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

Comments: NHB has concerns about potential impacts to the exemplary natural community. Please send detailed site plans to <u>mcoppola@dred.state.nh.us</u> for further review.

Natural Community	State ¹	Federal	Notes
Inland Atlantic white cedar swamp	7	Ţ	Changes to the hydrology of the wetland are the greatest threat facing the cedar swamp. Damming which causes pooling for extended periods can flood and drown existing trees, and drainage that results in lower water levels can lead to invasion by other species that can out compete and eventually eliminate Atlantic white cedar trees. Increased nutrient input from stormwater runoff could also deleteriously impact this acidic, low-nutrient plant community.
Vertebrate species	State ¹	Federal	Notes
Wood Turtle (Glyptemys insculpta)	SC		Contact the NH Fish & Game Dept (see below).

¹Codes: "E" = Endangered, "T" = Threatened, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (*) indicates that the most recent report for that occurrence was more than 20 years ago.

Contact for all animal reviews: Kim Tuttle, NH F&G, (603) 271-6544.

A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. For some purposes, including legal requirements for state wetland permits, the fact that no species of concern are known to be present is sufficient. However, an on-site survey would provide better information on what species and communities are indeed present.

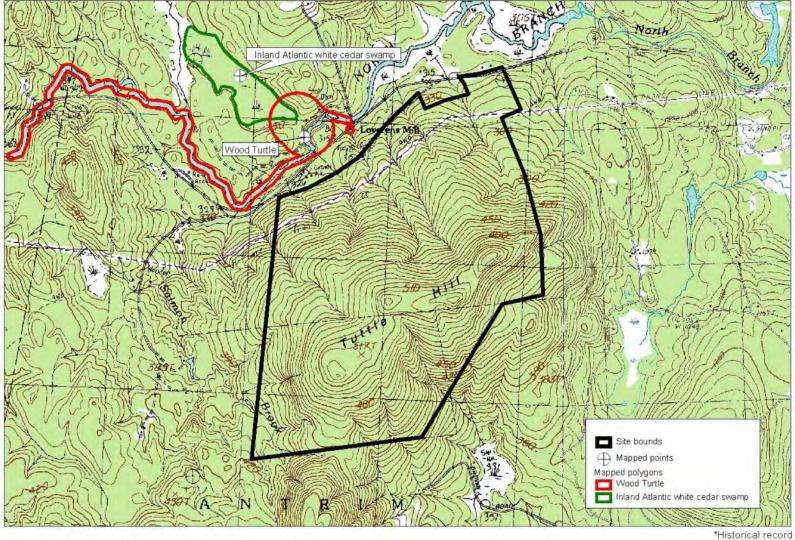
NHB10-0644



NH NATURAL HERITAGE BUREAU

Known locations of rare species and exemplary natural communities

Note: Mapped locations are not always exact. Occurrences that are not in the vicinity of the project are not shown.



0.25 0 0.25 0.5 0.75 1 Miles

1 24000

New Hampshire Natural Heritage Bureau - Community Record

Inland Atlantic white cedar swamp

Legal Status	Conservation Status
Federal: Not listed	Global: Not ranked (need more information)
State: Not listed	State: Critically imperiled due to rarity or vulnerability
Description at this L	ocation
Conservation Rank:	Excellent quality, condition and lanscape context ('A' on a scale of A-D).
Comments on Rank:	This site is probably the best, largest and most viable remaining cedar swamp in the western part of the state. It should remain among the highest conservation priorities in the state.
Detailed Description:	2006: Community observed and photographed. 2004: Community observed and photographed. 1993: <i>Chamaecyparis thyoides</i> (Atlantic white cedar) is the dominant tree with both <i>Acer rubrum</i> (red maple) and <i>Picea rubens</i> (red spruce) present in abundance. <i>Picea mariana</i> (black spruce) is scattered and less abundant. Occasionally, <i>Pinus strobus</i> (white pine) and <i>Betula alleghaniensis</i> (yellow birch) are also found. Dominant shrub species are <i>Gaylussacia baccata</i> (black huckleberry), <i>Nemopanthus mucronatus</i> (mountain holly), <i>Ilex laevigata</i> (smooth winterberry), and <i>Kalmia angustifolia</i> (sheep laurel). Common boreal components present are <i>Chamaedaphne calyculata</i> (leather-leaf), <i>Gaultheria hispidula</i> (creeping snowberry), and <i>Ledum groenlandicum</i> (Labrador-tea). The herbaceous layer is fairly abundant, although richness is somewhat limited. <i>Osmunda cinnamomea</i> (cinnamon fern), <i>Aralia nudicaulis</i> (wild sarsaparilla), <i>Maianthemum canadense</i> (Canada mayflower), <i>Sarracenia purpurea</i> (pitcher-plant) and <i>Carex trisperma</i> (three-seeded sedge) are commonly present. Sphagnum species are abundant. 1990: Has <i>Chamaecyparis thyoides</i> (Atlantic white cedar) to 14 inches dbh and a few larger individuals, abundant in areas away from streams. <i>Picea mariana</i> (black spruce), <i>Picea rubens</i> (red spruce), <i>Abies balsamea</i> (balsam fir), and <i>Acer rubrum</i> (red maple) also occur. Lesser amounts of <i>Pinus strobus</i> (white pine).
General Area:	1993: Soil type is a mucky peat, with the peat deposits averaging <1 meter. The soil is permanently saturated with a couple of obvious watercourses present. The pH of the groundwater is quite acidic with a range of 3.8-4.0. 1990: Purest and largest cedar around open black spruce bog (90 percent, 10-14 inches average range). Other areas 50-80 percent. Basin is surrounded by gradually sloping uplands which are punctuated by a number of small cliffs. 1961 (Baldwin): a fairly large boggy swamp with <i>Chamaecyparis thyoides</i> (Atlantic white cedar). Contains 6 stands of cedar.
General Comments:	1997: New community boundaries mapped based on 1993 field work. 1990: Encroaching urban development.
Management	
Comments:	
Location	

Managed By:	Loverens Mill Preserve		
Town(s): An	lsborough trim .3 acres	USGS quad(s): Lat, Long: Elevation:	Stoddard (4307211) 430433N, 0720142W 1080 feet
Precision:	Within (but not necessarily restricted	to) the area indic	cated on the map.
Directions:	Holmes Hill. Park on the right immer preserve sign kiosk. After ca. 900 fee	diately after cross et there will be a g p past the old mil	Holmes Hill Road. Turn right (north) onto sing the bridge over the river, at the TNC gravel road on the left. This is the trailhead. l, and look for a turnoff to the right. Proceed ttom of the basin, to the north.

Survey Site Name: Loverens Mill Cedar Swamp

Dates documented

First reported: 1961

Last reported: 2006-06-13

Kimball, Ben, et al. 2006. Field visit to Loverens Mill Cedar Swamp Preserve on June 13.

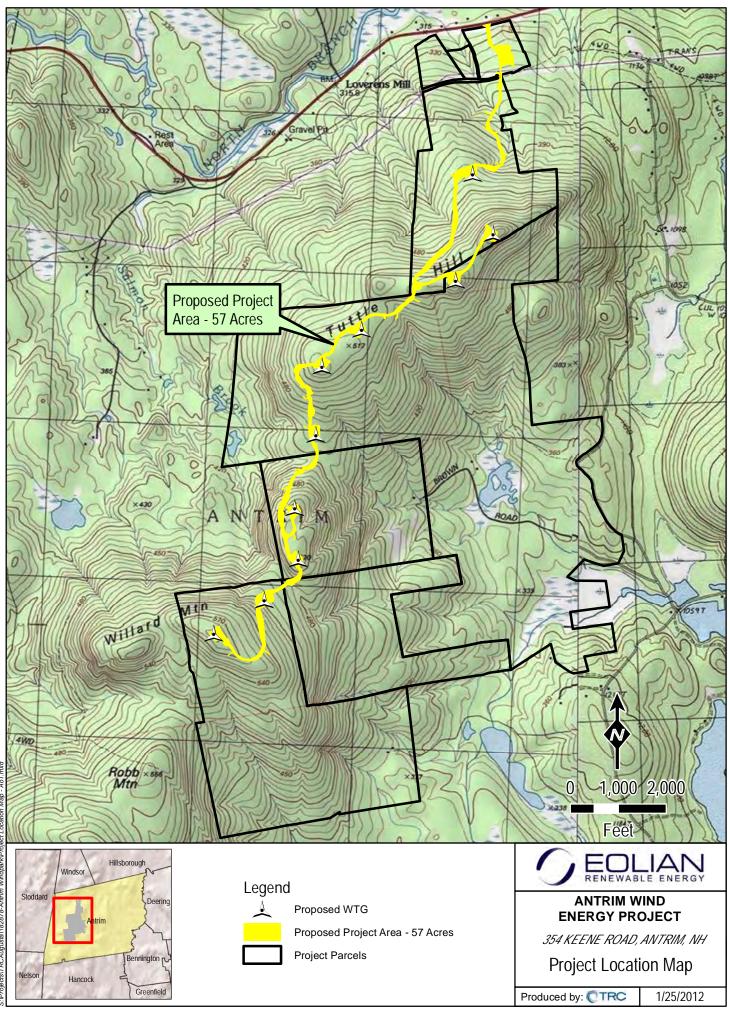
Sperduto, D. & N. Ritter. 1994. Altantic White Cedar Wetlands of New Hampshire. Environmental Protection Agency, Boston, MA.

New Hampshire Natural Heritage Bureau - Animal Record

Wood Turtle (*Glyptemys insculpta*)

Federal: Not listed Global: Apparently secure but with cause for concern State: SC State: Rare or uncommon Description at this Location Conservation Rank: Not ranked Comments on Rank: Detailed Description: 2008: Area 11603: 1 adult seen.2006: Area 11693: 1 adult seen.2005: Area 12135: 1 adult seen.2002: Area 12069: 1 observed. General Area: 2005: Area 12135: Crossing highway towards North Branch of Contoocook River.2002: Area 12069: Near cedar swamp. General Comments: Management Comments: Ecoation Survey Site Name: Loverens Mill Managed By: The Nature Conservancy #2 County: Hillsborough USGS quad(s): Stoddard (4307211) Town(s): Antrim Lat, Long: Size: 84.4 acres Elevation: Precision: Within (but not necessarily restricted to) the area indicated on the map. Directions: 2008: Area 11603: TNC property at Loverens Mill Road.2002: Area 12069: Loverens Mill property near trail to cedar swamp. Directions: 2008: Area 11603: TNC property at Loverens Mill Road.2002: Area 12069: Loverens Mill property near trail to cedar swamp.	Legal Status	Conservation Status
Description at this Location Conservation Rank: Not ranked Comments on Rank: Not ranked Detailed Description: 2008: Area 11603: 1 adult seen.2006: Area 11693: 1 adult seen.2005: Area 12135: 1 adult seen.2002: Area 12069: 1 observed. General Area: 2005: Area 12135: Crossing highway towards North Branch of Contoocook River.2002: Area 12069: Near cedar swamp. General Comments: Management Comments: Survey Site Name: Loverens Mill Managed By: The Nature Conservancy #2 County: Hillsborough USGS quad(s): Stoddard (4307211) Town(s): Antrim Lat, Long: Size: 84.4 acres Elevation: Precision: Within (but not necessarily restricted to) the area indicated on the map. Directions: 2008: Area 11603: TNC property at Loverens Mill Road.2002: Area 12069: Loverens Mill property near trail to cedar swamp.		
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Size:84.4 acresElevation:Precision:Within (but not necessarily restricted to) the area indicated on the map.Directions:2008: Area 11603: TNC property at Loverens Mill Road.2002: Area 12069: Loverens Mill property near trail to cedar swamp.	County: Hillsborough	USGS quad(s): Stoddard (4307211)
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Directions: 2008: Area 11603: TNC property at Loverens Mill Road.2002: Area 12069: Loverens Mill property near trail to cedar swamp.	Size: 84.4 acres	Elevation:
near trail to cedar swamp.	Precision: Within (but not necessari	ily restricted to) the area indicated on the map.
Dates documented		
First reported:2002-07-28Last reported:2008-06-01	First reported: 2002-07-28	Last reported: 2008-06-01

EXHIBIT 3 AREA MAP

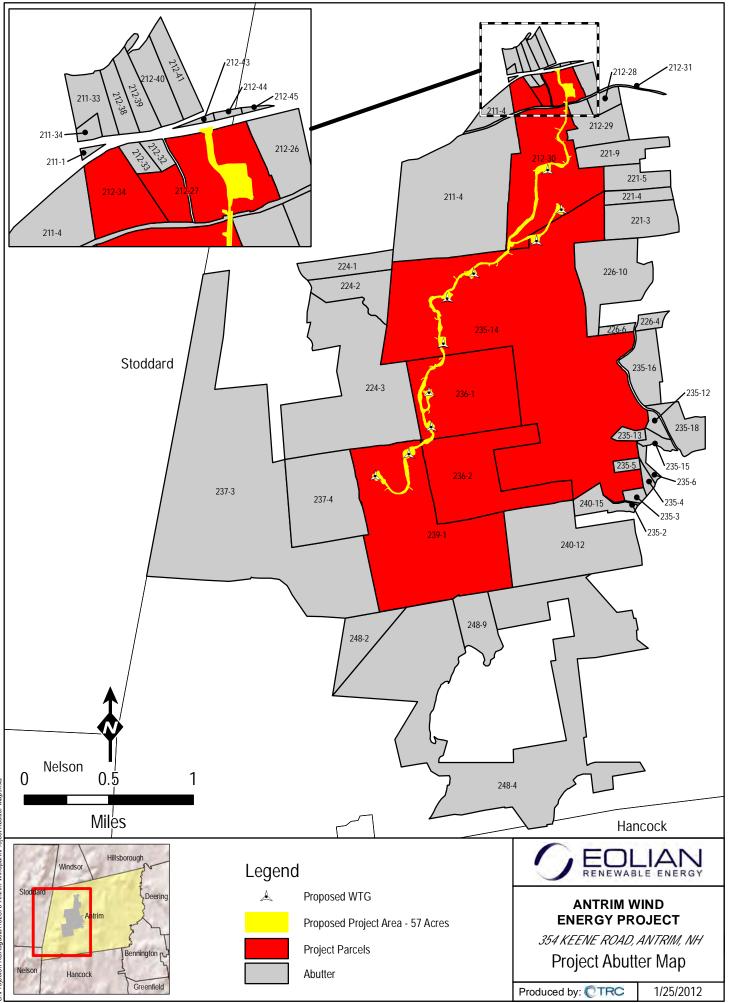


Projects\TRCAugusta\182878-Antrim Windpark\Project Location Map - Ac

EXHIBIT 4

TAX MAP

AND ABUTTER NOTIFICATION



ojects\TRCAugusta\182878-Antrim Windpark\Project Abutter Map.mxd

Antrim Wind Park Project Parcels and Project Abutters

Мар	Lot	Owner	Туре	Property Address	Owner Address	Owner Address
212	30	MICHAEL JAMES HUTCHINS OTT	Project Parcels	HIGH RANGE ROAD	PO BOX 160	ANTRIM, NH 03440
212	27	MICHAEL JAMES HUTCHINS OTT	Project Parcels	354 KEENE ROAD	PO BOX 160	ANTRIM, NH 03440
212	34	MICHAEL JAMES HUTCHINS OTT	Project Parcels	RUSSELL ROAD	PO BOX 160	ANTRIM, NH 03440
235	14	ANTRIM LIMITED PARTNERSHIP	Project Parcels	CRAIG ROAD	224 CRAIG RD	ANTRIM, NH 03440
236	1	CONTRAN, STEVEN R	Project Parcels	BRIMSTONE CORNER ROAD	26 MCINTOSH LANE	BEDFORD, NH 03110
236	2	PAUL & CAROL WHITTEMORE	Project Parcels	OFF BRIMSTONE CORNER ROAD	PO BOX 528	ANTRIM, NH 03440
239	1	WHITTEMORE TRUST	Project Parcels	103 CAMP ROAD - PVT RD 38	16501 NORTH ELMIRAGE RD 735	SURPRISE, AZ 85374
211	4	ELLENS PASTELS & ART HOUSE LLC	Abutter	KEENE ROAD	25 NORTH HOLT HILL ROAD	ANTRIM, NH 03440
211	33	HUTCHINSON TED & CAMPBELL DIANA L	Abutter	363 KEENE ROAD	PO BOX 469	HENNIKER, NH 03242
211	34	HUTCHINSON TED & DIANA	Abutter	367 KEENE ROAD	363 KEENE ROAD	ANTRIM, NH 03440
211	1	JACKSON BRADLEY	Abutter	KEENE ROAD	PO BOX 632	JAFFREY, NH 03452
212	31	OWNER UNKNOWN	Abutter	HIGH RANGE ROAD		
212	33	YORK RIVER REALTY TRUST	Abutter	KEENE ROAD	6 MANHATTAN DR	AMHERST, NH 03031
212	32	LISA J. MCALISTER/ROWLAND DOUGLAS & LISA	Abutter	362 KEENE ROAD	362 KEENE ROAD	ANTRIM, NH 03440
212	39	MOOTE WAYNE A	Abutter	355 KEENE ROAD	355 KEENE ROAD	ANTRIM, NH 03440
212	40	BARRY ROBERT W	Abutter	351 KEENE RD	351 KEENE RD	ANTRIM, NH 03440
212	43	FROSCH REAL ESTATE INVESTMENTS, LLC	Abutter	349 KEENE ROAD	349 KEENE ROAD	ANTRIM, NH 03440
212	44	VOYDATCH STEVEN & MAHALA	Abutter	345 KEENE ROAD	345 KEENE ROAD	DUNBARTON, NH 03045
212	45	ELLINWOOD CHRISTIE & ALBERTIN	Abutter	KEENE ROAD	PO BOX 127	ANTRIM, NH 03440
212	26	COUTURIER MARCEL J KUSNAROWIS PAULA J	Abutter	344 KEENE ROAD	344 KEENE ROAD	ANTRIM, NH 03440
212	29	MATA CRISTIAN ET UX	Abutter	OLD KEENE ROAD	73 RHODODENDRON RD	STONY BROOK, NY 11790
212	28	COLBY LARRY E	Abutter	HIGH RANGE ROAD	1121 OLD HILLSBOROUGH RO	HENNIKER, NH 03242
212	41	OLSEN FAMILY PTNRSHP IV LTD	Abutter	KEENE ROAD	PO BOX 2050	LECANTO, FL 34460-2050
212	38	RAIMONDI DAVID C & ELIZABETH	Abutter	359 KEENE ROAD	359 KEENE ROAD	ANTRIM, NH 03440
221	9	BERWICK BRUCE E & BARBARA I	Abutter	72 REED CARR RD	72 REED CARR RD	ANTRIM, NH 03440
221	5	IVEY MARY ELLEN, TRUSTEE	Abutter	REED CARR ROAD	36 COUNTRY CLUB LANE	MIDDLETON, MA 01949
221	4	GARRETT C SPENCER & JOANN H	Abutter	38 REED CARR RD	38 REED CARR RD	ANTRIM, NH 03440
221	3	IVEY III TRUSTEE SHELLEY/JEFFERSON F S	Abutter	20 REED CARR ROAD	36 COUNTRY CLUB LANE	MIDDLETON, MA 01949
224	2	LONGGOOD JANICE	Abutter	156 SALMON BROOK RD	156 SALMON BROOK RD	ANTRIM, NH 03440
224	3	MICHELI LYLE J & ANNE J	Abutter	SALMON BROOK ROAD	319 LONGWOOD AVE	BOSTON, MA 02115
224	1	SCHAEFER MARK J AND SCHACHER BRENDA K	Abutter	128 SALMON BROOK RD	128 SALMON BROOK RD	ANTRIM, NH 03440
226	10	CRAIG CLARK A JR	Abutter	224 CRAIG RD	224 CRAIG RD	ANTRIM, NH 03440
226	6	CRAIG MARY A	Abutter	CRAIG ROAD	826 FOREST ROAD	GREENFIELD, NH 03047
226	4	LEVESQUE WALTER T & JOY C	Abutter	CRAIG ROAD	12 BACKMEADOW RD	NOBLEBORO, ME 04555
235	16	CRAIG STEVEN M & JAMES P	Abutter			
235	18	ТОА	Abutter	CRAIG ROAD	PO BOX 517	ANTRIM, NH 03440
235	15	ТОА	Abutter	CRAIG ROAD	PO BOX 517	ANTRIM, NH 03440
235	12	STATE OF NEW HAMPSHIRE	Abutter	CRAIG ROAD		CONCORD, NH 03301
235	13	STATE OF NEW HAMPSHIRE	Abutter	CRAIG RD		CONCORD, NH 03301
235	6	TAYLOR GLENN P	Abutter	19 BRIMSTONE CORNER RD	19 BRIMSTONE CORNER RD	ANTRIM, NH 03440
235	4	ROBINSON DANIEL C STEVEN E CHARLES E GARY M	Abutter	BRIMSTONE CORNER ROAD	22802 NE 132ND CIRCLE	BRUSH PARAIIE, WA 98606
235	5	ROBINSON DANIEL C STEVEN E CHARLES E GARY M	Abutter	BRIMSTONE CORNER ROAD	22802 NE 132ND CIRCLE	BRUSH PARAIIE, WA 98606
235	3	CAUGHEY GEORGE H MICHELLE B TRUSTEES/THE CAUGHEY FAMILY REAL ESTATE TRUST	Abutter	BRIMSTONE CORNER ROAD	1 ENTRANCE WAY	WOODSIDE, CA 94062
235	2	OWNER UNKNOWN	Abutter	PRIVATE ROAD 70		
237	3	MEADOWSEND TIMBERLANDS LIM PAR	Abutter	AREA WILLARD MOUNTAIN	PO BOX 966	NEW LONDON, NH 03257
237	4	NH FISH & GAME DEPARTMENT	Abutter	WEST SIDE OF ANTRIM	11 HAZEN DRIVE	CONCORD, NH 03301

Мар	Lot	Owner	Туре	Property Address	Owner Address	Owner Address
240	15	CUDDIHY RUSSELL J & MARY	Abutter	BRIMSTONE CORNER ROAD	44 BRIMSTONE CORNER RD	ANTRIM, NH 03440
240	12	GIRL SCOUTS OF SWIFT WATER CSL	Abutter	BRIMSTONE CORNER ROAD	PO BOX 10832	BEDFORD, NH 03110
248	4	AUDUBON SOCIETY OF NH	Abutter	WILLARD POND	3 SILK FARM RD	CONCORD, NH 03301
248	9	AUDUBON SOCIETY OF NH	Abutter	WILLARD POND	3 SILK FARM RD	CONCORD, NH 03301
248	2	AUDUBON SOCIETY OF NH	Abutter	WILLARD POND	3 SILK FARM RD	CONCORD, NH 03301

ABUTTER NOTIFICATION OF WETLANDS PERMIT APPLICATION

VIA CERTIFIED MAIL

January 27, 2012

RE: Wetlands Permit Application Antrim Wind Energy LLC 155 Fleet Street Portsmouth, NH 03801-4050 Tax Map #: 212, 235, 236, 239; Lot #: 212-27, 30, & 34; 235-14; 236-1; 236-2; 239-1

Dear Sir or Madam:

This letter is to inform you that a permit application will be filed with the NH Department of Environmental Services for a wetlands permit associated with the above referenced project. Under state law RSA 482-A:3 I (d)(1), I am required to notify you about the application, which proposes work abutting your property.

Once it is filed, the permit application, including plans that show the proposed project will be available for viewing at the City or Town Clerk's Office in the town where the proposed project is located.

Sincerely,

John B. Kenworthy Executive Officer Antrim Wind Energy LLC

155 Fleet Street Portsmouth, NH 03801-4050 Phone: 603-570-4842

EXHIBIT 5

WETLANDS REPORT

WETLAND DELINEATION REPORT

For

Antrim Wind Energy Project Town of Antrim Hillsborough County, New Hampshire

Prepared for:

Antrim Wind Energy, LLC 155 Fleet Street Portsmouth, NH 03801



Prepared by:

TRC ENVIRONMENTAL CORPORATION 10 Maxwell Drive, Suite 200 Clifton Park, New York 12065

January 2012

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1.0 INTRODUCTION

Antrim Wind Energy LLC (AWE) is proposing to construct the Antrim Wind Energy Project (Project) on Tuttle Hill and Willard Mountain in the Town of Antrim, Hillsborough Country, New Hampshire. The proposed Project is sited entirely on privately owned land that is leased by AWE. The proposed Antrim Wind Energy Project involves the construction of 10 wind turbines, an electrical collection system and interconnection substation, approximately 4 miles of new access road, and an operations and maintenance building. There will be no new electrical transmission lines, other than collector system lines, constructed as part of this Project. The total direct impact for the access roads, the turbine pads, and electrical collector system will be approximately 57 acres.

The proposed project is sited on the ridges of Tuttle Hill and Willard Mountain which are oriented east-northeast to west-southwest. The ridges are approximately parallel to NH Route 9, which is about ³/₄ of a mile to the north. Between the ridgeline and Route 9 is an existing transmission corridor containing both an 115kV transmission line and a 34.5kV distribution circuit; the proposed Project will interconnect with the existing 115kV line. See Attachment A, Figure 1, for a map of the Project area and Project elements.

TRC Environmental Corporation (TRC) was retained by AWE to identify and delineate jurisdictional wetlands and waterways within the project area to support the design, or layout, of the proposed facilities. TRC has prepared this wetland delineation report on behalf of AWE to support the submittal of a Joint Application for a Permit (a U.S. Army Corps of Engineers (ACOE) and New Hampshire State wetlands permit).

2.0 CURRENT AND HISTORIC LAND USES

2.1 Current Land Use

Most of the Town of Antrim is undeveloped, and a large proportion of the town's landscape is heavily wooded. Much of Antrim's forested areas are located in the Rural and Rural Conservation Zoning Districts of town; these two districts constitute over 70% of Antrim's total area. These woodlands are viewed by the town as a renewable resource and are logged on a regular basis. In addition to abundant woodland, there are also numerous conservation areas, hiking trails and water features (Town of Antrim 2011).

2.2 Historic Land Use

Historically, the area of the proposed Project was cleared for sheep farming; numerous stone walls still remain as a result of this historic activity. After the decline of sheep farming, the site was allowed to regenerate into a forested condition. Subsequently, timber harvesting has occurred in many areas on Tuttle Hill and Willard Mountain. Currently, the land in and around the area of proposed development consists of undeveloped forest land in various stages of maturity, ranging from recent clear cuts and early successional stands as a result of timber harvesting, to mature forested areas.

3.0 WETLAND DELINEATION METHODOLOGY

3.1 Siting Alternatives

The layout of wind turbines is a function of several siting factors that balance the location of each wind turbine and environmental compatibility. These factors include:

- maximizing wind speed;
- minimizing tree clearing, wetland impacts, and the acquisition of land (the Project proposes to lease the land needed for the Project facilities);
- maintaining the current use of the land;
- connecting the turbines with an efficient and practical network of unpaved access roads for construction and maintenance of the turbines;
- co-locating electric cables with the access road corridor that connect the turbines to electric substation; and
- co-locating the electric transmission line that would connect the Project to the electric grid within existing infrastructure right-of-way.

These siting factors inherently create the need for a Project survey area that was sufficiently large enough to provide for an adequate area to identify cultural and natural resources and allow for the opportunity to evaluate siting alternatives that avoid and minimize impacts to any identified resources. After reviewing available topographic, soils mapping, and potential turbine locations for the Project area, TRC developed a survey area, which is depicted on Figure 1, found in Attachment A. With a survey corridor of 500 feet in width with a 250 foot radius around potential turbine locations, the survey area was approximately 462 acres.

To determine the potential for wetland impacts from construction of the Antrim Wind Energy Project, TRC assessed the survey area for the presence of federal and jurisdictional wetlands. A New Hampshire Certified Wetland Scientist from TRC conducted wetland delineations in August, September, and November 2011 (refer to Attachment B for professional resume and qualifications). TRC also investigated hydrologic connectivity (drainage ditches, natural swales, intermittent and perennial streams outside the study corridor when necessary to verify "normal conditions" or "nexus" hydrologic determinations. The delineations were performed in accordance with the U.S. Army Corps of Engineers (USACE) wetland delineation criteria and methodology which is described in Section 3.2. The USACE data sheets have been compiled for this Wetland Delineation Report and presented in Attachment C.

This report presents the delineation methodology, wetland identification, and the results of the field wetland delineation, including descriptions of on-site hydrology, soils and vegetation (see Section 4.0). Mapping is provided in Attachment A, with Figure 2 presenting the wetland mapping.

3.2 Wetland Delineation Method

TRC wetland delineation crews surveyed proposed corridors using the Federal Routine Determination Method presented in the USACE Wetlands Delineation Manual (USACOE 1987), including clarifications and interpretations provided in the March 6, 1992 guidance memorandum (Williams 1992), USACOE and Environmental Protection Agency guidance on jurisdictional forms (USACOE 2007), and the Regional Supplements to Corps Delineation Manual (USACOE 2009).

The 1987 USACE manual and guidance memorandums emphasize a three-parameter approach to wetland boundary determination in the field. This approach involves the identification of: (i) evidence of wetland hydrology; (ii) presence of hydric soils; and (iii) predominance of hydrophytic vegetation as defined by the National Plant List Panel (Reed 1988). Positive indicators of all three parameters are normally present in wetlands and serve to distinguish between both upland and transitional plant communities. Identified wetlands were classified according to Cowardin et al. (1979).

After a wetland area was initially identified, an appropriate transect and plot location was established, generally perpendicular to the wetland/upland boundary, in order to document conditions within each plant community and firmly establish the wetland boundary using wetland indicators. USACE Wetland Determination data forms were completed for each representative wetland transect. These data forms are provided in Attachment C to this report. The wetland boundary was marked with sequentially numbered (alpha-numeric) pink flagging labeled with "Wetland Delineation". Once wetland flags were in place, the location of each flag was pinpointed using a hand-held Global Positioning Satellite (GPS) unit. These data were downloaded into a GIS system and then plotted on the project base map (a USGS geo-referenced map), which is provided in Attachment A, Figure 2. The results of the delineations are summarized in Section 4.0.

4.0 WETLAND DELINEATION RESULTS

A total of thirty-three (33) wetland areas were identified in the Project survey area. This report describes and maps those wetlands within and in relative proximity to the proposed roads, turbines, collector system, the proposed transmission right-of-way corridor, and other facility sites associated with the Project (see Figure 2 in Attachment A). The 33 wetlands are represented in Table 4.1 due to their occurrence in the proposed corridor and in close proximity to the proposed project corridors or facility sites. Of the 33 wetlands, twenty-four (24) are deciduous broad-leaf forested wetlands, three (3) are conifer dominated forested wetland, two (2) are mixed forested and scrub-shrub wetland, and four (4) are scrub-shrub wetlands. Three (3) of the delineated wetlands within the Project corridor consist of two or more wetland types, including three (3) streams with associated palustrine wetlands (2 intermittent and 1 perennial stream). The wetland associated with the perennial water-way consists of a mixed palustrine system. Table 4-1 provides a summary of the wetlands identified along the Project corridor, including their classification in accordance with Cowardin et al (1979).

Narrative descriptions of wetland hydrology, soils and vegetation observed within the Project study area are presented in the following sections. Tables 4-1, 4-2 and 4-3 summarize the wetlands delineated in this report, streams identified, and the soil series information we assembled for the Project area respectively.

4.1 Vegetation

Within the Project area, vegetative communities consist of forested upland and wetland communities. Forest stands include mostly mixed coniferous and deciduous forest, with a small portion of the Project area sustained as a managed transmission line ROW and another portion recently timber harvested on Willard Mountain.

The wetland communities crossed by the Project include and scrub-shrub wetlands typically found in the transmission line ROW and isolated forested wetlands. The scrub-shrub wetlands typically contain sapling red maple (*Acer rubrum*), maleberry (*Lyonia lingustrina*), red osier dogwood (*Cornus stolonifera*), arrowwood (*Viburnum dentatum*), meadowsweet (*Spiraea latifolia*), and steeplebush (*Spiraea tomentosa*). The forested wetlands typically contain red maple, yellow birch (*Betula alleghaniensis*), and green ash (*Fraxinus pennsylvanica*).

Upland tree species found throughout the Project area include red oak (*Quercus rubra*), American beech (*Fagus grandifolia*), sugar maple (*Acer saccharum*), white pine (*Pinus strobus*), red spruce (*Picea rubens*), balsam fir (*Abies balsama*), quaking aspen (*Populus tremuloides*), paper birch (*Betula papyrifera*), eastern hemlock (*Tsuga canadensis*) and others. Upland herbaceous species include wild sarsassparilla (*Aralia nudicaulis*), New York fern (*Thelypteris noveboracensis*), Solomon's-seal (*Polygonatum pubescens*), star flower (*Trientalis borealis*), hayscented fern (*Dennstaedtia punctilobula*) and Canada mayflower (*Maianthemum canadense*).

4.2 Hydrology

Streams within the Project area include an unnamed perennial and intermittent streams draining both to the north (Route 9) toward the North Branch River and to the southeast draining into Gregg Lake. Because the Project area is along a ridgeline and moderately well drained, we observed very few perennial streams. Observations in the field generally suggest that rainfall and snow melt in the spring quickly run off the ridge to lower elevations, without collecting volumes that fill natural depressions or create natural ponds. Small forest wetland areas occur along skidder trails, confined pockets in the regional bedrock, saddle areas along the ridgeline, and in other areas of poorly drained soils that support wetland vegetation.

4.3 Soils

TRC reviewed the published soil survey of the Project area and conducted soil profile characterizations in the study corridor to confirm the presence of hydric soil indictors. Within the Project survey area, a total of 7 different soil types have been mapped by the Natural Resource Conservation Service (formerly the Soil Conservation Service) (USDA & NRCS 2009). Table 4-3 summarizes the soil series in the project area and indicates that most of the Project area soils are mapped with a slope of 3-35 percent. The soil type mapping has also been overlain on the Project location map (see Figure 3 in Attachment A). The mapped soil types range from excessively drained to well drained soils. Field surveys have resulted in delineating additional soil types that are poorly drained to very poorly drained soils and are hydric or wetland soils. Hydric soils are defined as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil.

The wetlands flagged in the Project corridors generally exhibited the soil characteristics of a dark surface horizon (A horizon) overlying grayish (10YR 5/1) to grayish brown (10YR 4/1), sandy loam subsoils with common redoximorphic features. As described below, this is typical of the loamy till parent material sediments in which many of the soils in the region are formed. The upland soils within the forested uplands lacked a low chroma matrix and had typical matrix chromas ranging between 3 and 6. In wetlands, the hydric soil showed evidence of a seasonal high water table in the form of low chroma matrix and redoximorphic features, indicating that the soils experience anaerobic conditions from prolonged saturation thereby meeting the definition of a hydric soil in some instances. The upland and more transitional area soils have developed redoximorphic features common to somewhat poorly to moderately well drained soils but did not exhibit the required low chroma matrix and as a result were not classified as hydric soils. In addition, as a result of glacial till environment, the subsoil (B) and substratum (C) horizons of both hydric and non-hydric soils commonly contain layers of loose stony material on steeper slopes with loamy materials, which are not necessarily indicative of an aquic moisture regime or reducing conditions.

Table 4-1 Summary of Wetlands within Project Area						
Figure 28.5" x 11"Sheet Number		Wetland Types and Associations	Associated Wetland Impact	Cowardin Classification		
3	AN1	Isolated forested wetland. Contains VP1	No direct impact	PFO1		
3	AN2	Isolated forested wetland. Bat radar within wetland	0.007 acre/316 sq. ft. Access road.	PFO4		
3	AN3	Isolated forested wetland	No direct impact	PFO1		
3	AN4	Isolated forested wetland. Contains VP2	No direct impact	PFO1		
3	AN5	Isolated forested wetland. Contains VP3	No direct impact	PFO1		
3	AN6	Isolated forested wetland	No direct impact	PFO1		
2	AN7	Isolated forested wetland straddling property line	No direct impact	PFO1		
2, 3	AN8	Forested wetland draining southeast associated with intermittent stream AN9	0.001 acre/34 sq. ft. Access road.	PFO4		
2	AN10	Isolated forested wetland within skidder trail	No direct impact	PFO1		
1, 2	AN11	Isolated forested wetland with ephemeral inlet and outlet	No direct impact	PFO1		
1	AN12	Isolated forested wetland within No direct impact skidder trail		PFO1		
1, 2	AN13 Isolated forested wetland along ATV No direct impact trail		PFO1			

Table 4-1 Summary of Wetlands within Project Area						
		Wetland Types and Associations	Associated Wetland Impact	Cowardin Classification		
1	AN14	Isolated forested wetland within skidder trail	No direct impact	PFO1		
1	AN15	Isolated forested wetland within skidder trail	No direct impact	PFO1		
1	AN16	Very small isolated wetland along old skidder trail	No direct impact	PFO1		
1	AN18	6 forested wetland areas draining north associated with perennial stream AN17	No direct impact	PFO1/4 & PSS1		
1	AN20	Isolated scrub-shrub wetland within transmission ROW	No direct impact	PSS1		
1	AN21	Isolated scrub-shrub wetland within transmission ROW	No direct impact	PSS1		
1	AN22	Isolated forested wetland within skidder trail	0.009 acre/379 sq. ft. Access road.	PFO1		
1	AN23	Isolated forested wetland within skidder trail	0.0004 acre/16 sq. ft. Access road.	PFO1		
3	AN24	Isolated forested wetland. Associated with VP 5. ATV trail within wetland.	No direct impact	PFO1		
3	AN25	Isolated forested wetland. Associated with VP 4.	No direct impact	PFO4		
4	AN26	Forested wetland draining to the northwest along property line	No direct impact	PFO1		
4	AN27	Forested wetland draining to the southeast. Associated with intermittent stream AN28.	0.019 acre/ 815 sq. ft. Access Road	PFO1		

Table 4-1 Summary of Wetlands within Project Area						
Figure 2 8.5" x 11" Sheet Number	Wetland ID	Wetland Types and Associations	Associated Wetland Impact	Cowardin Classification		
1	AN30 Isolated forested wetland with ephemeral inlet and outlet 0.02 acre/869 sq. ft.		0.02 acre/869 sq. ft. Substation	PFO1		
1	AN31	Isolated scrub-shrub wetland within transmission ROW	0.019 acre/848 sq. ft. Transmission tap structure and guys	PSS1		
1	AN32	AN32 Isolated scrub-shrub wetland within transmission ROW		PSS1		
1	AN33	Isolated forested wetland within skidder trail	No direct impact	PFO1		
1	AN35 AN35 Isolated forested an scrub-shrub wetland located in ROW and to the North of the ROW		No direct impact	PFO1/PSS1		
3	3 AN36 Isolated forested wetland with peat soils		No direct impact	PFO1		
3	3 AN37 Isolated forested wetland adjacent to ATV trail		No direct impact	PFO1		
3	AN38	Isolated forested wetland with potential vernal pool	No direct impact	PFO1		
A ANI41 Isolate		Isolated forested wetland.	0.083 acre/3,620 sq. ft. Turbine 9.	PFO1		
TOTAL IMPACT			0.192 acre/8,349 sq. ft.			

4.4 Wetland Descriptions

The following narratives briefly characterize the delineated wetlands summarized in Table 4-1. Refer to Figure 2 for the location of these wetlands within the project study area and landscape in Attachment A.

<u>Wetland AN1</u> is a deciduous mixed forest wetland dominated by red maple (*Acer rubrum*), and black spruce (*Picea mariana*). It is located within a pocket of ledge along the ridgeline of Tuttle Hill. This wetland also contains Vernal Pool 1.

<u>Wetland AN2</u> is a deciduous mixed forest wetland dominated by yellow birch (*Betula alleghaniensis*) and black spruce. It is located within a pocket of ledge along the ridgeline of Tuttle Hill.

<u>Wetlands AN3, AN4 and AN5</u> are deciduous forested wetlands dominated by red maple. They are located within pockets of ledge along the ridgeline of Tuttle Hill. Wetland AN4 contains Vernal Pool 2, and wetland AN5 contains Vernal Pool 3.

<u>Wetland AN6</u> is a deciduous forest wetland dominated by red maple. It is located within a pocket of ledge along the ridgeline between Tuttle Hill and Willard Mountain.

<u>Wetland AN7</u> is a very small deciduous forest wetland dominated by red maple. It is located along a stone wall within a pocket of ledge along the ridgeline between Tuttle Hill and Willard Mountain.

<u>Wetland AN8</u> is a deciduous forest wetland dominated by red maple and yellow birch. It is located within a swale draining from Wetland AN7 towards the southeast. An intermittent stream segment (Stream AN9) is located within this wetland. The stream flows between very large boulders; eventually the hydrology disappears as the slope increases along the southeast boundary of the wetland.

<u>Wetlands AN10, AN11 and AN12</u> are deciduous forest wetlands dominated by yellow birch and green ash (*Fraxinus pennsylvanica*). They are located in hillside seeps created by skidder activity.

<u>Wetland AN13</u> is a deciduous forest wetland dominated by red maple. It is located within a hillside seep created by skidder activity. An ATV access trail traverses the northwestern portion of this wetland.

<u>Wetlands AN14 and AN15</u> are deciduous forest wetlands dominated by yellow birch and green ash. They are located in hillside seeps created by skidder activity.

<u>Wetland AN16</u> is a very small deciduous forest wetland dominated by red maple. It is located within an old skidder trail to the north of the transmission ROW.

<u>Wetland AN18</u> is a wetland complex associated with perennial stream AN17. Six components of this wetland complex were individually identified as wetlands AN18a, b, c, d, e and f. Component AN18a is an area of scrub shrub within the existing transmission corridor; it is dominated by red osier dogwood (*Cornus stolonifera*), green ash, and black willow (*Salix nigra*). Wetlands AN18 b, c, d, e and f are deciduous mixed forested wetlands dominated by green ash, yellow birch, and red maple. Each of these wetlands has been impacted by logging activity.

<u>Wetlands AN20 and AN21</u> are deciduous scrub shrub wetlands dominated by red maple, meadowsweet (*Spiraea latifolia*), and steeplebush (*Spiraea tomentosa*). They are located within the existing transmission corridor.

<u>Wetlands AN22 and AN23</u> are deciduous forest wetlands dominated by red maple, yellow birch and green ash. They are located in hillside seeps created by skidder activity.

<u>Wetland AN24</u> is a deciduous forest wetland dominated by red maple and yellow birch. It is located within a depression on the ridgeline between Tuttle Hill and Willard Mountain. An ATV

trail traverses the through the middle of this wetland, from north to south. This wetland also contains Vernal Pool 5.

<u>Wetland AN25</u> is an evergreen mixed forest wetland dominated by eastern hemlock (*Tsuga canadensis*) and yellow birch. It is located within a depression on the ridgeline between Tuttle Hill and Willard Mountain. This wetland contains Vernal Pool 4.

<u>Wetland AN26</u> is a deciduous forest wetland dominated by red maple and yellow birch. It is located within a depression on the ridgeline between Tuttle Hill and Willard Mountain. This wetland drains to the northwest.

<u>Wetland AN27</u> is a deciduous mixed forest wetland dominated by red maple, yellow birch, and black spruce. It is located within the saddle area at the northern base of Willard Mountain. The wetland drains to the southeast and feeds Intermittent Stream AN28 which drains to the southeast.

<u>Wetland AN30</u> is a very small deciduous forest wetland dominated by red maple. It receives ephemeral flow from wetland AN31 which is located upslope (and within the existing transmission corridor). This wetland has an ephemeral drainage that flows towards intermittent stream AN29 to the north.

<u>Wetlands AN31 and AN32</u> are deciduous scrub shrub wetlands dominated by red maple, meadowsweet and maleberry (*Lyonia lingustrina*). They are located within the existing transmission corridor. Wetland AN31 ephemerally drains to the north into Wetland AN30.

<u>Wetland AN33</u> is a very small deciduous forest wetland dominated by red maple. It is located within a hillside seep created by skidder activity.

<u>Wetland AN35</u> is primarily a forested wetland dominated by red maple, but includes an area of scrub shrub. The scrub shrub component is located within the existing transmission corridor, on the southern portion of the wetland, and is dominated by winterberry (*Ilex verticillata*).

<u>Wetland AN36</u> is an isolated forested wetland dominated by red maple. This wetland contains organic soils. It is located in a saddle area and is near an ATV trail.

<u>Wetland AN37</u> is a small isolated deciduous forest wetland dominated by red maple. It has an ephemeral drainage that flows west across an ATV trail that is adjacent to the wetland.

<u>Wetland AN38</u> is an isolated deciduous forest wetland dominated by red maple, with a thick understory of winterberry shrubs. It has an ephemeral drainage that flows northwest through a steep boulder area. This wetland contains an area which has been identified as a potential vernal pool.

<u>Wetland AN41</u> is an isolated deciduous forest wetland dominated by red maple with a sparse understory of red maple and yellow birch saplings and a dense herbaceous layer dominated by cinnamon fern. This wetland is located at the base of a long bouldery slope.

4.5 Waterbody Descriptions

The following narratives briefly characterize the identified perennial and intermittent watercourses summarized in Table 4-2. Refer to Figure 2 in Attachment A for the location of these watercourses within the project study area.

Table 4-2Summary of Streams within Project Area							
Figure 2 8.5" x 11" Sheet Number	Stream ID	Flow Regime	Associated Impact	Associated Wetland(s)			
2	AN9	Intermittent	No direct impact	AN8			
1	AN17	Perennial	74 linear feet, 4 foot wide channel	AN18a,b,c,d,e,f			
1	AN19	Intermittent	No direct impact	Tributary to AN17			
4	AN28	Intermittent	No direct impact	AN27			
1	AN28a	Intermittent	No direct impact				
1	AN29	Intermittent	156 linear feet, 1 foot wide channel				
1	AN34	Intermittent	No direct impact	Flows into AN17			
2	AN40	Intermittent	No direct impact				

<u>Stream AN9</u> is an intermittent stream with a sandy substrate. The average width of the stream is 2 feet and the bank height is less than one foot. There was approximately 1 inch of flowing water in the stream at the time of the wetland delineation survey (in late summer, 2011). The stream channel commences within wetland AN8 and disperses within the same wetland due to slopes and a bouldery landscape, which allows for subsurface flow.

<u>Stream AN17</u> is perennial stream with a gravel/cobble substrate. The average width of the stream is 4 feet and the bank height averages approximately one foot. There was approximately 5 inches of flowing water at the time of the delineation. The stream flows into the survey area from the south and then out to the north, flowing towards Route 9. Intermittent Streams AN19 and AN34 flow into this stream.

<u>Stream AN19</u> is an intermittent stream with a sandy substrate. The average width of the stream is approximately 1 foot and the bank height is less than one foot. There was approximately 1 inch of flowing water at the time of the delineation. The stream channel commences in a forested setting, within a seep on a slope, and flows into Stream AN17.

<u>Stream AN28</u> is an intermittent stream with a gravel/sand substrate. The average width of the stream is approximately 3 feet and the bank height is less than one a foot. There were approximately 4 inches of flowing water at the time of the delineation. The stream channel commences within wetland AN27 and flows to the southeast.

<u>Stream AN28a</u> is an intermittent stream with a gravel/cobble substrate. The average width of the stream is approximately 2 feet and the bank height averages approximately one foot. There were approximately 2 inches of flowing water at the time of the delineation. The stream channel commences within an upland area with steep slopes and disperses within the upland as it flows

down slope. This dispersal is due to slopes and a bouldery landscape, which allows for subsurface flow.

<u>Stream AN29</u> is an intermittent stream with a gravel/cobble substrate. The average width of the stream is approximately one foot, and the bank height is less than one foot. There was no flowing water in the streambed at the time of the delineation. The stream channel commences within an upland area with steep slopes and disperses within the upland as it flows down slope. This dispersal is due to slopes and a bouldery landscape, which allows for subsurface flow.

<u>Stream AN34</u> is an intermittent stream with a gravel/cobble substrate. The average width of the stream is approximately 3 feet and the bank height is less than one foot. There were approximately 4 inches of flowing water at the time of the delineation. The stream channel commences in a forested setting within a seep on a slope and flows into Stream AN17.

<u>Stream AN40</u> is an intermittent stream with a gravel/cobble substrate. The average width of the stream is 2 feet and the bank height averaged around a foot. There were approximately 2 inches of flowing water at the time of the delineation. The stream channel commences within an upland area with steep slopes and disperses within the upland downslope due to slopes and a bouldery landscape, which allows for subsurface flow.

4.6 Natural Resource Conservation Service Soil Series Descriptions

The following are the abbreviated descriptions of each of the relevant soil types taken from the USDA (Natural Resource Conservation Service) Official Soil Series Descriptions Online Soils Database and the Soil Survey Geographic Database (SSURGO) for Hillsborough County, New Hampshire, Western Part (USDA & NRCS 2009). Additional information regarding relevant soil characteristics are also summarized in Table 4-3. Soils mapping of the Project area is in Attachment A, Figure 3.

Table 4-3Soil Description Summary						
Soil Names	Symbol	% Slopes	Hydric (y/n)	Parent Material	Drainage Class	
Lyman-Tunbridge-Rock outcrop complex	161C	3-15	N	Lyman: Loamy Till Underlain by Schist Bedrock; Tunbridge: Loamy Till Underlain by Granite	Lyman: Somewhat Excessively Drained; Tunbridge: Well Drained	
Lyman-Tunbridge-Rock outcrop complex	161D	15-35	N	Lyman: Loamy Till Underlain by Schist Bedrock; Tunbridge: Loamy Till Underlain by Granite	Lyman: Somewhat Excessively Drained; Tunbridge: Well Drained	
Tunbridge-Lyman- Monadnock complex, stony	160B	3-8	N	Tunbridge: Loamy Till Underlain by Granite; Lyman: Loamy Till Underlain by Schist Bedrock; Monadnock: Loam Underlain by Sandy Till	Tunbridge: Well Drained; Lyman: Somewhat Excessively Drained; Monadnock: Well Drained	
Tunbridge-Lyman- Monadnock complex, stony	160C	8-15	N	Tunbridge: Loamy Till Underlain by Granite; Lyman: Loamy Till Underlain by Schist Bedrock; Monadnock: Loam Underlain by Sandy Till	Tunbridge: Well Drained; Lyman: Somewhat Excessively Drained; Monadnock: Well Drained	
Marlow stony loam	77C	8-15	N	Loamy Till	Well Drained	
Marlow stony loam	77D	15-35	N	Loamy Till	Well Drained	
Rock outcrop	399			Granite	Excessively Drained	

Tunbridge-Lyman-Monadnock complex, stony

Tunbridge Series: These very moderately deep, well drained soils formed in loamy till of Wisconsin age derived mainly from micaceous schist, gneiss, and phyllite. They are on mountain side slopes, mountain tops, mountain ridges, hill tops, and hill slopes. Slope ranges from 0 to 75 percent. The A horizon is typically very friable dark brown sandy loam, with weak fine granular structure. The B horizon is typically reddish brown to yellowish brown silt loams. It is friable with subangular blocky structure. Bedrock is usually encountered at 28 inches.

Lyman Series: These shallow, somewhat excessively drained soils formed thin mantle of till and frost fractured rock fragments derived principally from gray, greenish gray, or nearly black mica schist rocks with lesser amounts of phyllite, granite, and gneiss. They are found on rocky hills, mountains and high plateaus. Slopes range from 3 to 35 percent. Ap horizons are typically black and 6 inches or more thick. Texture is sandy loam, fine sandy loam, very fine sandy loam, loam or silt loam in the fine-earth fraction. The E horizon generally is a reddish gray fine sandy loam, with very weak fine granular structure. The B horizon generally is a dark red to brown loam, with very weak fine granular structure. Bedrock is usually encountered at a depth of 18 inches.

Monadnock Series: These very deep, well drained soils formed in a loamy mantle underlain by acid, sandy till of Wisconsin age derived mainly from schist, granite, gneiss, and quartzite. They are on upland hills, plains, and mountain sideslopes. Slope ranges from 0-60 percent. The A horizon is typically very friable brown fine sandy loam. The E horizon generally is a light brownish gray sandy loam with a weak fine granular structure. The B horizon generally is reddish to yellowish brown, 5 to 23 inches deep, very friable with a weak fine granular structure. The C horizon consists of gravelly loamy sand extending to a depth of 65 inches.

Lyman-Tunbridge-Rock outcrop complex

Lyman Series: These shallow, somewhat excessively drained soils formed thin mantle of till and frost fractured rock fragments derived principally from gray, greenish gray, or nearly black mica schist rocks with lesser amounts of phyllite, granite, and gneiss. They are found on rocky hills, mountains and high plateaus. Slopes range from 3 to 35 percent. Ap horizons are typically black and 6 inches or more thick. Texture is sandy loam, fine sandy loam, very fine sandy loam, loam or silt loam in the fine-earth fraction. The E horizon generally is a reddish gray fine sandy loam, with very weak fine granular structure. The B horizon generally is a dark red to brown loam, with very weak fine granular structure. Bedrock is usually encountered at a depth of 18 inches.

Tunbridge Series: These very moderately deep, well drained soils formed in loamy till of Wisconsin age derived mainly from micaceous schist, gneiss, and phyllite. They are on mountain side slopes, mountain tops, mountain ridges, hill tops, and hill slopes. Slope ranges from 0 to 75 percent. The A horizon is typically very friable dark brown sandy loam, with weak fine granular structure. The B horizon is typically reddish brown to yellowish brown silt loams. It is friable with subangular blocky structure. Bedrock is usually encountered at 28 inches.

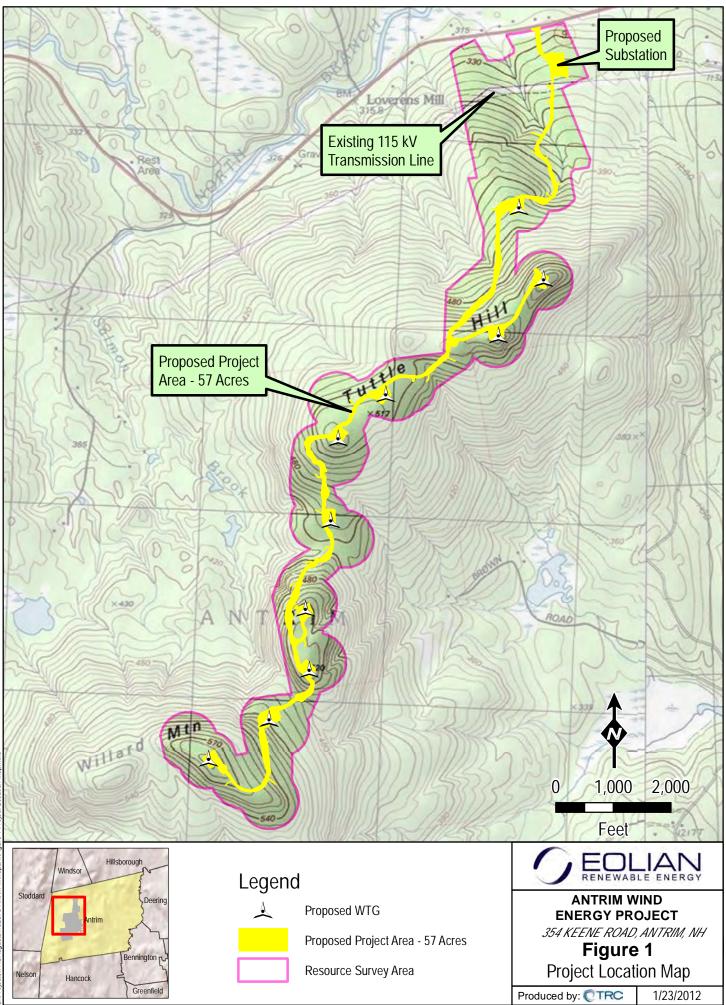
Marlow Series

These well drained soils formed in dense, loamy till derived mainly from mica schist, granite, and phyllite. They are found on drumlins and glaciated uplands. They are moderately deep to a densic contact and very deep to bedrock. Slope ranges from 0 to 60 percent. Typically, the A horizon is a friable very dark gray fine sandy loam with a moderate fine granular structure. Generally, the E horizon is gray fine sandy loam, with very friable consistence. The B horizon consists of a yellowish red to olive fine sandy loam with a weak fine granular structure. The C horizon is an olive gray fine sandy loam with moderate medium platy structure and is very firm.

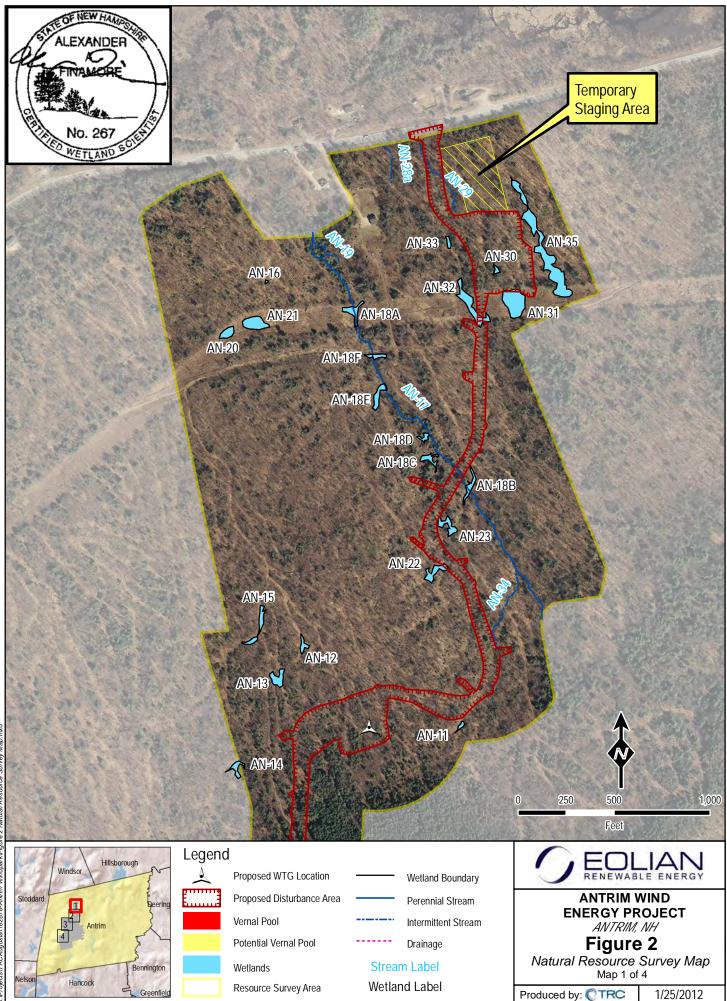
5.0 **REFERENCES**

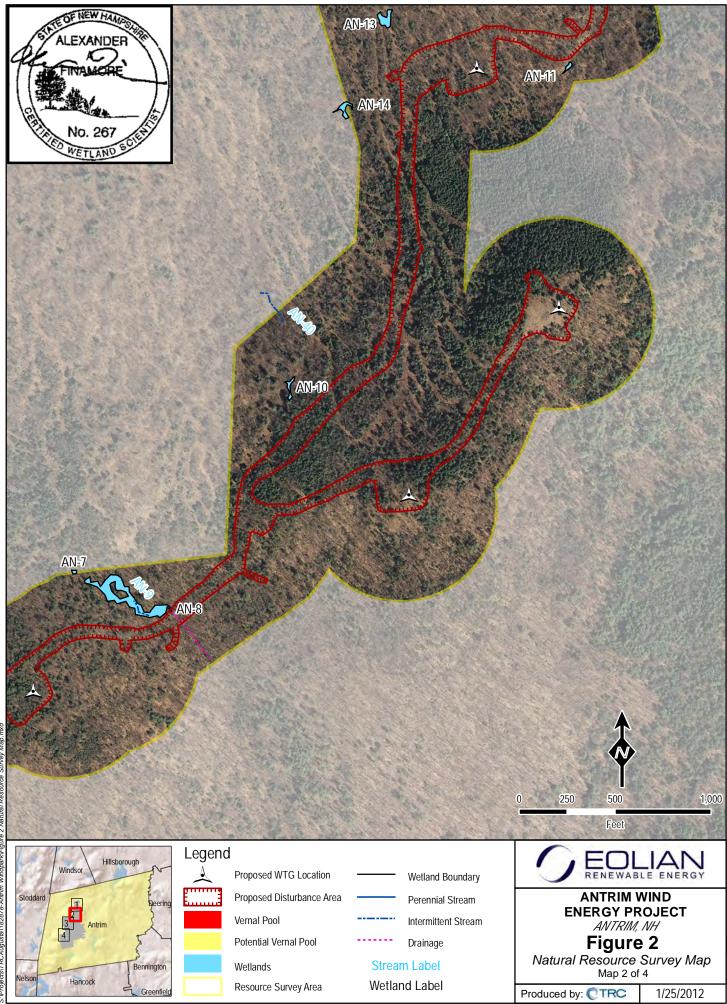
- Cowardin, L.M., V. Carter, F. Golet, and E. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service. 103 pp.
- Natural Resource Conservation Service. 1995. Hydric Soils of the United States, Revised Dec. 15, 1995.
- Reed, P.B. Jr. 1988. National list of plant species that occur in wetlands: national summary. U.S. Fish Wildl. Serv. Biol. Rep. 88(24). 244 pp.
- Town of Antrim. 2011. Zoning Map. Online: http://www.antrimnh.org/Pages/AntrimNH_Planning/Zoning_Map[1].pdf. Site visited December 9, 2011.
- USACOE. 1987. Corps of Engineers Wetland Delineation Manual. Technical Report U-87-1. Waterways Experiment Station, Vicksburg, MS.
- USACOE. 2009. Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region. Online: http://www.usace.army.mil/CECW/Documents/cecwo/reg/trel09-19.pdf. Site visited December 9, 2011.
- USACOE and Environmental Protection Agency. 2007. US Army Corps of Engineers Jurisdictional Form Instructional Guidebook.
- USDA, NRCS. 2009. Soil Survey Geographic Database (SSURGO) for NH602, Hillsborough County, New Hampshire, Western Part. Available for download at: http://soildatamart.nrcs.usda.gov. Site visited January 4, 2012.
- USDA, NRCS. 2011. Soil series classification online database. Online: http://soils.usda.gov/technical/classification/scfile/index.html . Site visited December 9, 2011.
- USDA, NRCS. 2011. Web soil survey. Online: http://websoilsurvey.nrcs.usda.gov/app/ . Site visited December 9, 2011.
- Williams, A.E. 1992. Memorandum: Clarification and Interpretation of the 1987 Manual. U.S. Army Corps of Engineers.

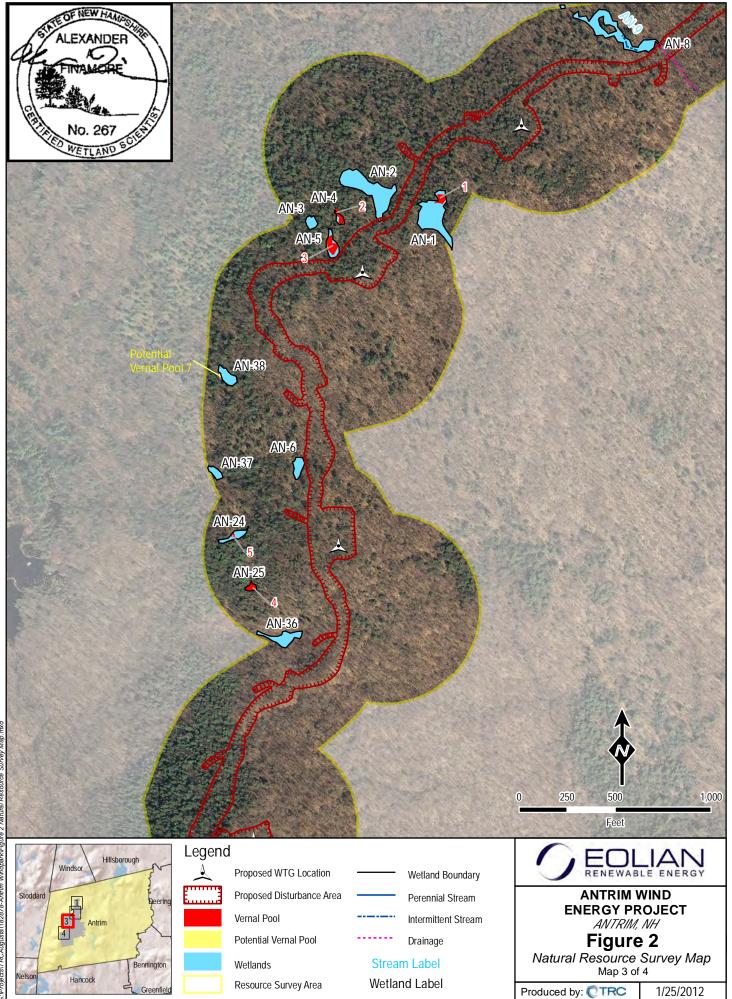
ATTACHMENT A PROJECT MAPPING

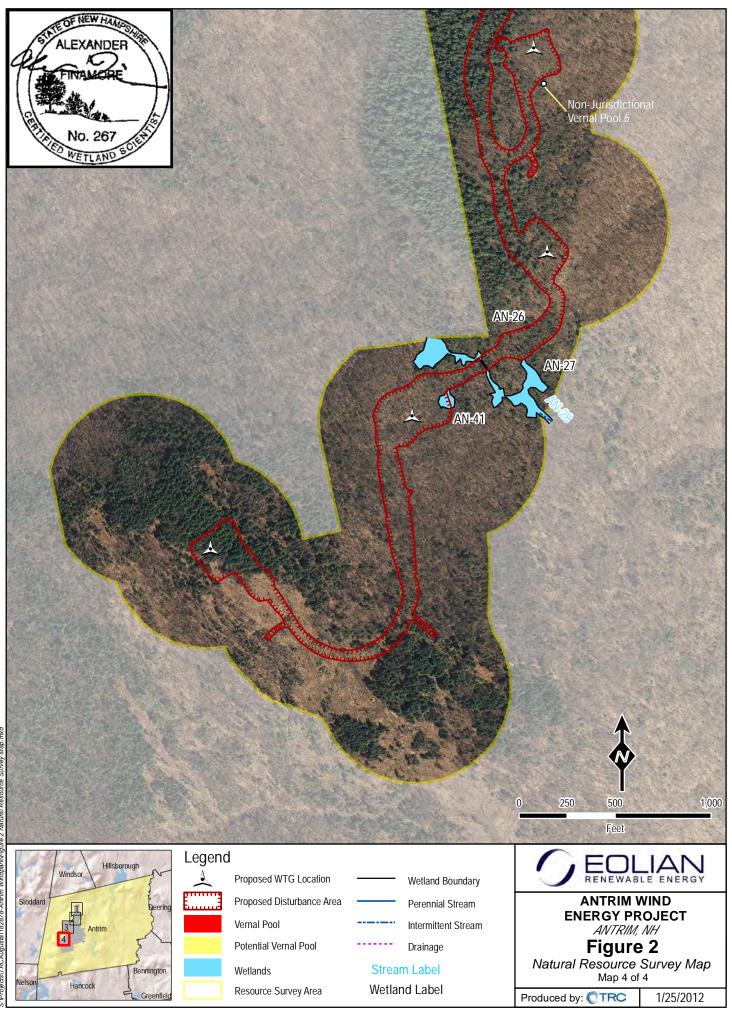


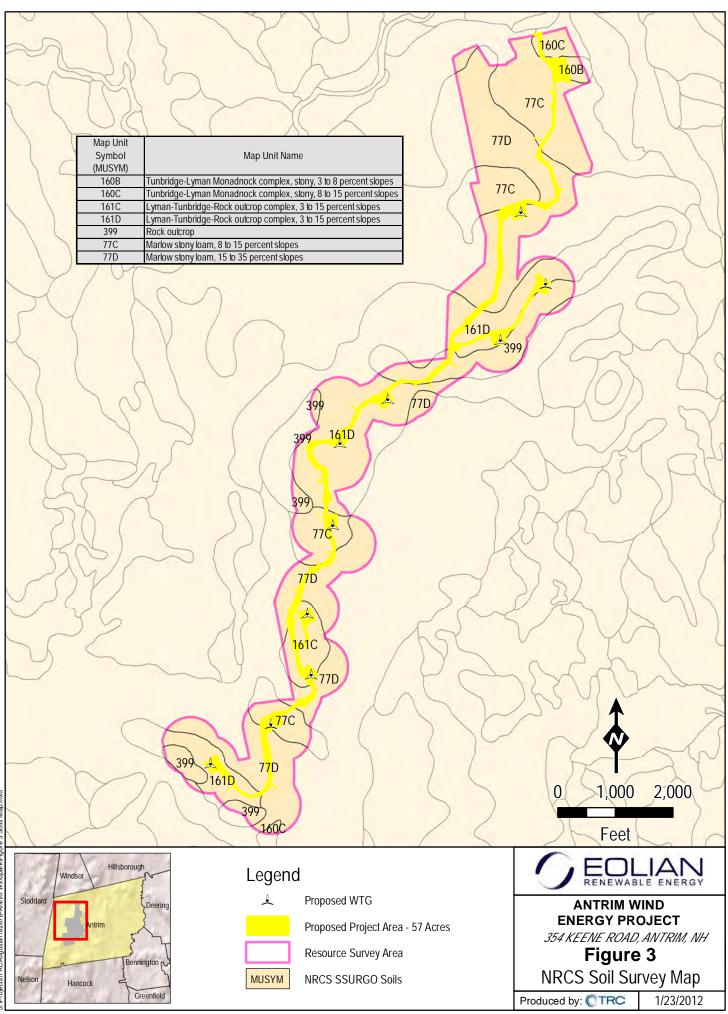
\Projects\TRCAugusta\182878-Antrim Windpark\Figure 1 Project Location Map











Projects\TRCAugusta\182878-Antrim Windpark\Figure 3 Soils Map

ATTACHMENT B PROFESSIONAL RESUME



ALEXANDER A. FINAMORE

EDUCATION

B.S., Environmental Science and Management, University of Rhode Island, 2004

AREAS OF EXPERTISE

Mr. Finamore has over 7 years experience encompassing

- Federal, State, and Local Environmental Permitting
- Wetland Delineations and Reports
- Subsurface Wastewater Disposal Design
- Vernal Pool Identification and Assessment
- Land Survey
- Preliminary Environmental Site Assessments (PESS)

REPRESENTATIVE EXPERIENCE

Mr. Finamore has completed or managed numerous wetland delineations and vernal pool surveys throughout the northeastern U.S., ranging from single house lots to large linear projects. Mr. Finamore has also completed or managed the permitting process and/or the preparation of technical documents in accordance to State and Federal site location, wetlands, and subsurface wastewater disposal system regulations.

Reunion Energy, Grandpa's Knob Wind Farm, Natural Resource Mapping – VT Wetland Scientist, 2011 Mr. Finamore organized and directed field crews, performed wetland delineations along corridor of proposed 20 wind turbines and collector line, performed vernal pool surveys, attended site walk with client and pertinent state and federal regulators.

Eolian Wind, Antrim Wind Farm, Natural Resource Mapping – NH Wetland Scientist, 2011 Mr. Finamore performed wetland delineations along corridor of proposed 10 wind turbines and collector line, performed vernal pool surveys, attended site walk with client and pertinent state and federal regulators

VELCO, Lines 350 & 370, Natural Resource Mapping – VT Wetland Scientist, 2011 Mr. Finamore organized and directed field crews, performed wetland delineations, wetland function and values assessments, stream classifications, and natural community surveys along existing transmission line right-of-ways

National Grid, 015S, Turtle Sweeps – MA Ecologist, 2011 Mr. Finamore performed Turtle Sweeps for Wood Turtle and Eastern Box Turtle for line restoration work due to tornado damage

National Grid, S9, Natural Resource Mapping – MA Wetland Scientist, 2011 Mr. Finamore performed wetland delineations for reconductoring along the S9 line.

National Grid, Y151, Natural Resource Mapping – MA Wetland Scientist, 2011 Mr. Finamore performed wetland delineations for reconductoring along the A126 line.



Spectra Energy, Wetland Permitting – CT, MA, RI Wetland Scientist, 2011 Mr. Finamore performed local and state wetland permitting for installation of launcher and receiver barrels for pipeline segments throughout Algonquin's distribution system

MBCR, Natural Resource Mapping – Walpole, MA Wetland Scientist, 2010 Mr. Finamore delineated watersheds for culvert sizing using GIS and ground truthing.

Central Maine Power, Co., Natural Resource Mapping and State and Federal Permit Application – ME Wetland Scientist, 2009-Present Mr. Finamore performed wetland delineations along proposed transmission line corridors, performed vernal pool surveys, performed routine stormwater inspections, performed invasive species inventories, field located resources and setbacks for pre-construction, prepared GIS maps and data tables for associated NRPA, Site Location of Development, and Army Corps of Engineers permitting, provided survey assistance on structure location and conductor height over major river crossings.

First Wind & 3Phase, Land Survey – Lincoln, ME Survey Technician, 2010 Mr. Finamore performed structure layout for the collector and transmission line servicing 40 wind turbines.

NSTAR, Natural Resource Mapping – RI Wetland Scientist, 2010 Mr. Finamore performed wetland delineations along an existing transmission line.

Town of Morrisville, FERC Pre-application Document – Morrisville, VT Ecologist, 2010 Mr. Finamore collected existing condition information regarding geologic, soil, wetland, wildlife, botanical, and rare, threatened and endangered species pertinent to FERC relicensing from federal, state, and local agencies for four hydroelectric dams.

Bangor Hydro, Natural Resource Mapping and State and Federal Permit Application, Ellsworth – ME Wetland Scientist, 2009-2010 Mr. Finamore performed wetland delineations along proposed transmission line corridors, assessed potential access roads for viability, prepared GIS maps and data tables for associated NRPA, Site Location of Development, and Army Corps of Engineers permitting.

National Grid, A127, Natural Resource Mapping – MA Wetland Scientist, 2009 Mr. Finamore performed wetland delineations for reconductoring along the A126 line.

VELCO, PV-20, Natural Resource Mapping – VT Wetland Scientist, 2009 Mr. Finamore performed wetland delineations, wetland function and values assessments, stream classifications, and natural community surveys along existing transmission line right-of-ways.

L.L. Bean, Inc., Natural Resource Mapping and Permitting – Freeport, ME Wetland Scientist & Survey Technician, 2005-2008 Mr. Finamore performed wetland delineations, vernal pool surveys, topographic mapping, and prepared Natural



Resource Protection Act applications and assisted with Site Location of Development Act applications.

First Wind, Natural Resource Mapping – ME Wetland Scientist, 2006-2007 Mr. Finamore performed wetland delineations and vernal pool surveys for the First Wind Stetson Wind Farm and associated transmission line corridors.

Bangor Hydro Electric Company, Natural Resource Mapping – Bangor, ME Wetland Scientist, 2008 Mr. Finamore performed wetland delineations and vernal pool surveys for the rebuild of Line 64.

Maine Coast Heritage Trust, Natural Resource Inventory – Stonington, ME Wetland Scientist, 2009 Mr. Finamore performed a Natural Resource inventory of 11 properties managed by MCHT. Inventories included gathering of available GIS data, historical aerial photography, and historical accounts of land use, vegetative inventories, soil evaluations, and wildlife observations.

Zyacorp Cinemagic, Natural Resource Mapping, Environmental Permit Applications, Environmental Site Assessment and Topographic Mapping – Westbrook and Saco, ME Environmental Scientist & Survey Technician, 2005-2009 Mr. Finamore performed wetland delineations, vernal pool surveys, topographic mapping on commercial properties. Mr. Finamore prepared environmental permit applications under Maine's Natural Resource Protection Act and a Preliminary Environmental Assessment on the Saco property.

New England College, Environmental Permit Application – Henniker, NH Wetland Scientist, 2009 Mr. Finamore prepared environmental permit applications under New Hampshire's Fill and Dredge in Wetlands statute for the installation of an athletic field.

Bangor Retirement Community, Wetland Mitigation Design and Monitoring – Bangor, ME Wetland Scientist, 2007-2009 Mr. Finamore assisted with the design of a wetland creation area mitigating over an acre of wetland disturbance. Mr. Finamore performed annual monitoring of the mitigation area and submitted reports to the Maine Department of Environmental Protection.

Town of Wells, Salt Marsh Erosion Monitoring – Wells, ME Wetland Scientist, 2004 Mr. Finamore mapped erosional features within a coastal marsh and inventoried vegetation and wildlife

CERTIFICATIONS AND TRAINING

Certified Wetland Scientist, #267, NH Licensed Site Evaluator, #391, ME

AFFILIATIONS

Maine Association of Wetland Scientists – Member (Member since 2005) Maine Association of Site Evaluators – Member (Member since 2005)

ATTACHMENT C U.S. ARMY CORPS OF ENGINEERS WETLAND DETERMINATION DATA FORMS

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

				0	
Project/Site: Antrim Wind Project	City/County:	/: Antrim		Sampling Date: 10-Aug-11	
Applicant/Owner: Eolian Renewable Energy, LLC		State: N	4	Sampling Point:	AN1 Wet
Investigator(s): AF JG	Section, T	ownship, Range: S.	Т.	R.	
Landform (hillslope, terrace, etc.): Hillside	Local relief (c	oncave, convex, none):	hummocky	y Slope:	0.0 % / 0.0 °
Subregion (LRR or MLRA):	-	Long.:	-	Dat	um:
Soil Map Unit Name:			WVI classifi	cation: PFO	
	ntly disturbed? problematic? sampling p	Are "Normal Circur (If needed, explair point locations, tra	n any answe	rs in Remarks.)	
Hydrophytic Vegetation Present? Yes ● No ○ Hydric Soil Present? Yes ● No ○ Wetland Hydrology Present? Yes ● No ○		e Sampled Area n a Wetland? Yes	● _{No} 〇		
Remarks: (Explain alternative procedures here or in a separate rep VP-1, Isolated, No overland drainage	port.)				

Hydrology

Wetland Hydrology Indicators:	Secondary Indicators (minimum of 2 required)				
Primary Indicators (minimum of one required;	Surface Soil Cracks (B6)				
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)			
✓ High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)			
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)			
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)			
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)			
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)			
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)			
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)			
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)			
Sparsely Vegetated Concave Surface (B8)		✓ FAC-neutral Test (D5)			
Field Observations:					
Surface Water Present? Yes No	Depth (inches):4				
Water Table Present? Yes No	Depth (inches): 3				
Saturation Present? Yes • No ·	Wetland Hyd Depth (inches):0	drology Present? Yes $ullet$ No $igloo$			
Describe Recorded Data (stream gauge, monito	ring well, aerial photos, previous inspections), if ava	ailable:			
Remarks:					

VEGETATION - Use scientific names of plants

VEGETATION - Ose scientific fiames of pre	11113	Dominant Species?		Sampling Point: AN1 Wet
Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
1. Acer rubrum	20	50.0%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: 8 (A)
2. Picea mariana	20	✓ 50.0%	FACW-	()
3.		0.0%		Total Number of Dominant Species Across All Strata: 8 (B)
4.	0	0.0%		Species Across All Strata: 8 (B)
5.	0	0.0%		Percent of dominant Species
6.	0	0.0%		That Are OBL, FACW, or FAC:(A/B)
7	0	0.0%		Prevalence Index worksheet:
	40	= Total Cove	r	Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15')			-	$0\text{BL species} \qquad 0 \qquad \text{x 1} = 0$
1. Betula alleghaniensis	10	✓ 25.0%	FAC	FACW species $83 \times 2 = 166$
2. Picea mariana	15	37.5%	FACW-	
3. Vaccinium corymbosum	15	37.5%	FACW-	
4	0	0.0%		$\begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \\ \end{array} \end{array} \end{array} \\ \begin{array}{c} \end{array} \end{array} \\ \begin{array}{c} \end{array} \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} $
5	0	0.0%		$\begin{bmatrix} UPL \text{ specilles} & \underline{x \ 5} = \underline{x \ 5} $
6	0	0.0%		Column Totals: <u>113</u> (A) <u>256</u> (B)
7	0	0.0%		Prevalence Index = $B/A = 2.265$
	40	= Total Cove	r	Hydrophytic Vegetation Indicators:
Herb Stratum (Plot size: 5')		_		Rapid Test for Hydrophytic Vegetation
1.Carex intumescens	15	✔ 45.5%	FACW+	✓ Dominance Test is > 50%
2.Osmunda cinnamomea	10	30.3%	FACW	✓ Dominance rest is > 50.78 ✓ Prevalence Index is $\leq 3.0^{-1}$
3.Coptis trifolia	8	24.2%	FACW	
4	0	0.0%		Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6	0	0.0%		
7	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must
8	0	0.0%		be present, unless disturbed or problematic.
9	0	0.0%		Definitions of Vegetation Strata:
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0	0.0%		at breast height (DBH), regardless of height.
12.	0	0.0%		Oral's states to the states to be a three of the DDU and
Woody Vine Stratum (Plot size:)	33	= Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
 1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0	0.0%		height.
11	0	= Total Cove	r	
				Hydrophytic Vegetation
				Present? Yes No
Remarks: (Include photo numbers here or on a separate sh	neet.)			

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Profile Desc	Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)						
Depth	Mat			dox Features			
(inches)	Color (mois		Color (moist)	% Type ¹	Loc ²	Texture	Remarks
0-10	10YR 2	/1 100%				Muck	
				· ·			
¹ Type: C=Cor	centration. D=De	pletion. RM=Redu	uced Matrix, CS=Covere	ed or Coated Sand Gra	ns ² Loca	ation: PL=Pore Lining. M=Ma	atrix
Hydric Soil						Indicators for Proble	_
Histosol			Polyvalue Belov	v Surface (S8) (LRR R,		_	inatic rigane sons :
Histic Ep			MLRA 149B)				LRR K, L, MLRA 149B)
Black His			Thin Dark Surfa	ace (S9) (LRR R, MLRA	A 149B)	_	x (A16) (LRR K, L, R)
	n Sulfide (A4)		Loamy Mucky N	/lineral (F1) LRR K, L)			r Peat (S3) (LRR K, L, R)
	Layers (A5)		Loamy Gleyed	Matrix (F2)		Dark Surface (S7)	
	Below Dark Surfa	re (A11)	Depleted Matrix	< (F3)			urface (S8) (LRR K, L)
	rk Surface (A12)		Redox Dark Su	rface (F6)		Thin Dark Surface	
			Depleted Dark			_	asses (F12) (LRR K, L, R)
	uck Mineral (S1)		Redox Depress			Piedmont Floodplai	in Soils (F19) (MLRA 149B)
	eyed Matrix (S4)					Mesic Spodic (TA6)) (MLRA 144A, 145, 149B)
Sandy Re						Red Parent Materia	al (TF2)
	Matrix (S6)					Very Shallow Dark	Surface (TF12)
Dark Sur	face (S7) (LRR R, I	VILRA 149B)				Other (Explain in R	emarks)
³ Indicators of	of hydrophytic vege	etation and wetla	nd hydrology must be p	resent, unless disturbe	ed or proble	ematic.	
Restrictive I	ayer (if observe	d):					
Type: L							
Depth (inc						Hydric Soil Present?	Yes 🔍 No 🔾
	10						
Remarks:							

Project/Site: Antrim Wind Project	City/County: Antrim	Sampling Date: 10-Aug-11					
Applicant/Owner: Eolian Renewable E	nergy, LLC	St	ate: NH	Sampling Point:	AN1 Upl	and	
Investigator(s): AF JG		Section, Township, Range	: S. T.	R.			
Landform (hillslope, terrace, etc.):	Hillside	Local relief (concave, convex,	none): none	Slope:	5.0%/	2.9 °	
Subregion (LRR or MLRA):	Lat.:	Lor	ng.:	Datum:			
Soil Map Unit Name:			NWI classi	fication:			
Are Vegetation , Soil . Are Vegetation , Soil . Summary of Findings - At	, or Hydrology 🗌 naturally p	problematic? (If needed,	al Circumstances" , explain any answ ns, transects	ers in Remarks.)		etc.	
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes O No O Yes No O Yes No O	Is the Sampled Area within a Wetland?	Yes 🔿 No 🖲				
Remarks: (Explain alternative pro	edures here or in a separate repo	ort.)					

	Secondary Indicators (minimum of 2 required)					
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)						
Water-Stained Leaves (B9)	Drainage Patterns (B10)					
Aquatic Fauna (B13)	Moss Trim Lines (B16)					
Marl Deposits (B15)	Dry Season Water Table (C2)					
Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)					
Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)					
Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)					
Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)					
Thin Muck Surface (C7)	Shallow Aquitard (D3)					
	Microtopographic Relief (D4)					
	FAC-neutral Test (D5)					
Depth (inches):						
Depth (inches):	drology Present? Yes 🔿 No 🖲					
Wetland Hy Depth (inches):	ydrology Present? Yes 🔾 No 🖲					
pring well, aerial photos, previous inspections), if av	/ailable:					
	Water-Stained Leaves (B9) Aquatic Fauna (B13) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Thin Muck Surface (C7) Other (Explain in Remarks) Depth (inches): Depth (inches): Depth (inches):					

	1113	Dominant Species?		Sampling Point: AN1 Upland
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
				Number of Dominant Species
1. Fagus grandifolia	25		FACU	That are OBL, FACW, or FAC: (A)
2. <u>Picea rubens</u>	33		FACU	Total Number of Dominant
3. Acer rubrum		30.1%	FAC	Species Across All Strata: 7 (B)
4		0.0%		Percent of dominant Species
5		0.0%		That Are OBL, FACW, or FAC:28.6% (A/B)
6	0	0.0%		
7		0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	83	= Total Cove	r	Total % Cover of: Multiply by:
1. Picea rubens	10	✓ 55.6%	FACU	OBL species $0 \times 1 = 0$
2. Fagus grandifolia		16.7%	FACU	FACW species $0 \times 2 = 0$
3. Vaccinium angustifolium		27.8%	FACU-	FAC species $38 \times 3 = 114$
4.		0.0%		FACU species $91 \times 4 = 364$
5		0.0%		UPL species x 5 =
6.		0.0%		Column Totals: 129 (A) 478 (B)
7.		0.0%		Prevalence Index = $B/A = 3.705$
		= Total Cove		
Herb Stratum (Plot size: 5')			•	Hydrophytic Vegetation Indicators:
1.Aralia nudicaulis	5	16.1%	FACU	Rapid Test for Hydrophytic Vegetation
2.Lycopodium obscurum		32.3%	FACU	Dominance Test is > 50%
3. Malanthemum canadense		9.7%	FAC-	Prevalence Index is ≤3.0 ¹
4.trillium spp.		9.7%		Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5. Trientalis borealis		32.3%	FAC	Problematic Hydrophytic Vegetation ¹ (Explain)
6.	0	0.0%		
7.		0.0%		¹ Indicators of hydric soil and wetland hydrology must
8.		0.0%		be present, unless disturbed or problematic.
9.	0	0.0%		Definitions of Vegetation Strata:
10.	0	0.0%		
11	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
12.	0	0.0%		
	31	= Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
Woody Vine Stratum (Plot size:)				
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
2	0	0.0%		
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0	0.0%		height.
	0	= Total Cove	r	
				Hydrophytic
				Vegetation V O N O
				Present? Yes No •
Remarks: (Include photo numbers here or on a separate she	et.)			

Depth	•	ribe to Aatrix	the depth	needed to document the indicator or confirm the Redox Features	absence of indicators.)	
(inches)	Color (m		%	Color (moist) % Type 1 Loc ²	Texture	Remarks
0-6	10YR	3/2	100%		Loam	
6-7	2.5Y	5/3	100%		Fine Loamy Sand	
7-16	10YR	4/3	100%		Fine Sandy Loam	
16+	2.5Y	5/6	100%		Fine Sandy Loam	
				·		
				·		
¹ Type: C=Cor	ncentration. D=	Depletio	n. RM=Red	luced Matrix, CS=Covered or Coated Sand Grains ² Loc	ation: PL=Pore Lining. M=M	atrix
Hydric Soil		,				2
				Polyvalue Below Surface (S8) (LRR R,		entatic rigune sons .
	ipedon (A2)			MLRA 149B)		(LRR K, L, MLRA 149B)
Black His				Thin Dark Surface (S9) (LRR R, MLRA 149B)	_	x (A16) (LRR K, L, R) or Peat (S3) (LRR K, L, R)
Hydroger	n Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)	Dark Surface (S7)	
Stratified	Layers (A5)			Loamy Gleyed Matrix (F2)		urface (S8) (LRR K, L)
	Below Dark Su		11)	Depleted Matrix (F3)	Thin Dark Surface	
Thick Da	rk Surface (A12)		Redox Dark Surface (F6)		Masses (F12) (LRR K, L, R)
Sandy Mu	uck Mineral (S1))		Depleted Dark Surface (F7)		in Soils (F19) (MLRA 149B)
	eyed Matrix (S4	l)		Redox Depressions (F8)	Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
Sandy Re					Red Parent Materi	al (TF2)
	Matrix (S6)		4 (05)		Very Shallow Dark	Surface (TF12)
	face (S7) (LRR				Other (Explain in F	Remarks)
³ Indicators o	of hydrophytic v	egetatio	n and wetl	and hydrology must be present, unless disturbed or prob	lematic.	
Restrictive L	ayer (if obser	ved):				
Туре:						
Depth (inc	ches):				Hydric Soil Present?	Yes 🔾 No 🖲
Remarks:						



AN1 Wetland



AN1 Wetland



AN1 Upland

				•		
Project/Site: Antrim Wind Project	City/County:	Antrim		Sampling Date: 1	0-Aug-11	
Applicant/Owner: Eolian Renewable Energy, LLC		State:	NH	Sampling Point:	AN2 Wet	
Investigator(s): AF JG	Section, T	ownship, Range: S.	т.	R.		
Landform (hillslope, terrace, etc.): Ridgetop	Local relief (o	oncave, convex, none)	concave	Slope:	0.0%/0.	.0 °
Subregion (LRR or MLRA): Lat.	:	Long.:		Dat	um:	
Soil Map Unit Name:	-		NWI classif	fication: PFO/PSS		
	ntly disturbed? y problematic? sampling p	Are "Normal Circu (If needed, expla point locations, t	in any answ	ers in Remarks.)		
Hydrophytic Vegetation Present? Yes ● No ○ Hydric Soil Present? Yes ● No ○ Wetland Hydrology Present? Yes ● No ○		e Sampled Area in a Wetland? Ye	s 🖲 No C)		
Remarks: (Explain alternative procedures here or in a separate replaced beta Radar location	port.)					

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)		
Primary Indicators (minimum of one required;	Surface Soil Cracks (B6)			
Surface Water (A1)	Drainage Patterns (B10)			
✓ High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Moss Trim Lines (B16)		
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)		
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)		
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)		
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)		
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)		
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)		
Inundation Visible on Aerial Imagery (B7)		Microtopographic Relief (D4)		
Sparsely Vegetated Concave Surface (B8)	Uther (Explain in Remarks)	FAC-neutral Test (D5)		
Field Observations:				
Surface Water Present? Yes O No •	Depth (inches):			
Water Table Present? Yes No	Depth (inches): 9	·· • • •		
Saturation Present? Yes Solution View No	Depth (inches):0	drology Present? Yes $ullet$ No $igloo$		
Describe Recorded Data (stream gauge, monito	ring well, aerial photos, previous inspections), if ava	ailable:		
Remarks:				

	11113	Dominant Species?		Sampling Point: AN2 Wet
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
1 Picea mariana	25	55.6%	FACW-	Number of Dominant Species That are OBL, FACW, or FAC: 6 (A)
2. Betula alleghaniensis		44.4%	FAC	
3.		0.0%		Total Number of Dominant Species Across All Strata: 6 (B)
4.		0.0%		Species Across All Strata:6 (B)
5	0	0.0%		Percent of dominant Species
6.		0.0%		That Are OBL, FACW, or FAC:(A/B)
7	0	0.0%		Prevalence Index worksheet:
1		= Total Cove	-	Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15')	40		1	$\frac{1}{0\text{BL species}} \frac{1}{100} \times 1 = 100$
1. Picea mariana	10	33.3%	FACW-	
2. Spiraea latifolia	10	33.3%	FAC+	
3. Vaccinium corymbosum	10	33.3%	FACW-	
4	0	0.0%		FACU species $\begin{array}{c} 0 \\ \hline \end{array}$ x 4 = $\begin{array}{c} 0 \\ \hline \end{array}$
5.		0.0%		UPL species $0 \times 5 = 0$
6.	0	0.0%		Column Totals: <u>185</u> (A) <u>300</u> (B)
7.		0.0%		Prevalence Index = $B/A = 1.622$
-		= Total Cove	r	
Herb Stratum (Plot size: 5')				Hydrophytic Vegetation Indicators:
1 <u>.</u> Eriophorum virginicum	100	90.9%	OBL	
2.Osmunda cinnamomea	5	4.5%	FACW	✓ Dominance Test is > 50%
3.Rubus hispidoides	5	4.5%	FACW	✓ Prevalence Index is $\leq 3.0^{1}$
4.	0	0.0%		Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5.	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6.	0	0.0%		
7.	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must
8.	0	0.0%		be present, unless disturbed or problematic.
9.	0	0.0%		Definitions of Vegetation Strata:
10.	0	0.0%		
11		0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
12.	0	0.0%		
Woody Vine Stratum (Plot size:)		= Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
	0			
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
2	0	0.0%		
3	<u>0</u>	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4		-		height.
	0	= Total Cove	r	
				I hadrom kurtin
				Hydrophytic Vegetation
				Present? Yes No
Remarks: (Include photo numbers here or on a separate sh	eet.)			

	ription: (Desc	ribe to	the depth				firm the	absence of indicators.)		
Depth (inches)	ا Color (m	Matrix	_ % -	Re Color (moist)	dox Featu %	res Type 1	Loc ²	Texture	Remarks	
					70	Туре	LOC-		Remarks	
0-8	10YR	2/1	100%			· ·		Muck		
8-15	2.5Y	5/1	100%					Sand		
						·				
								-		
1 T 0 0										
		Depletio	n. KM=Red	uced Matrix, CS=Cover	ed or Coate	a Sand Grai	ns -Loca	ation: PL=Pore Lining. M=N		
Hydric Soil								Indicators for Probl	ematic Hydric Soils :	3
Histosol				Polyvalue Belo MLRA 149B)	w Surface (S8) (LRR R,		2 cm Muck (A10)	(LRR K, L, MLRA 149B)	
Histic Epi	ipedon (A2)			,	(00) (1		4400)		x (A16) (LRR K, L, R)	
Black His	stic (A3)			Thin Dark Surf			A 149B)		or Peat (S3) (LRR K, L, R	2)
Hydroger	n Sulfide (A4)			Loamy Mucky		LRR K, L)		Dark Surface (S7)		-)
Stratified	Layers (A5)			Loamy Gleyed					Surface (S8) (LRR K, L)	
Depleted	l Below Dark Su	irface (A	11)	Depleted Matri				Thin Dark Surface		
Thick Da	rk Surface (A12	2)		Redox Dark Su					Aasses (F12) (LRR K, L, F	2)
Sandy M	uck Mineral (S1)		Depleted Dark		')			ain Soils (F19) (MLRA 14	
Sandy GI	leyed Matrix (S4	1)		Redox Depress	sions (F8)				6) (MLRA 144A, 145, 149	
	edox (S5)							Red Parent Mater		
	Matrix (S6)							Very Shallow Dark		
	face (S7) (LRR	R, MLRA	149B)							
								Other (Explain in	Remarks)	
Indicators c	of hydrophytic v	egetatio	n and wetla	nd hydrology must be	present, uni	ess disturbe	d or probl	ematic.		
Restrictive L	ayer (if obse	rved):								
Type:										
Depth (ind	ches):							Hydric Soil Present?	Yes 🔍 No 🔾	
Remarks:										
riomanior										

Project/Site: Antrim Wind Project	City/County: Antrim	Sampling Date: 10-Aug-11		
Applicant/Owner: Eolian Renewable Energy, LLC	State: NH	Sampling Point: AN2 upland		
Investigator(s): AF JG	Section, Township, Range: S. T.	R.		
Landform (hillslope, terrace, etc.): Ridgetop	Local relief (concave, convex, none): none	Slope: 3.0 % / 1.7 °		
Subregion (LRR or MLRA):	Long.:	Datum:		
Soil Map Unit Name:	NWI class	ification:		
	ntly disturbed? Are "Normal Circumstances" problematic? (If needed, explain any answ sampling point locations, transects	vers in Remarks.)		
Hydrophytic Vegetation Present? Yes No ● Hydric Soil Present? Yes No ● Wetland Hydrology Present? Yes No ●	Is the Sampled Area within a Wetland? Yes O No	٩		
Remarks: (Explain alternative procedures here or in a separate rep	port.)			

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)		
Primary Indicators (minimum of one required;	Surface Soil Cracks (B6)			
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)		
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)		
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)		
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)		
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)		
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)		
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)		
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)		
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)		
Sparsely Vegetated Concave Surface (B8)		FAC-neutral Test (D5)		
Field Observations:				
Surface Water Present? Yes O No 🖲	Depth (inches):			
Water Table Present? Yes O No 🖲	Depth (inches):	rology Present? Yes 🔿 No 🖲		
Saturation Present? Yes O No O	Depth (inches):	Irology Present? Yes 🔾 No 🖲		
Describe Recorded Data (stream gauge, monito	pring well, aerial photos, previous inspections), if ava	ilable:		
Remarks:				

	1113	Dominant Species?		Sampling Point: AN2 upland
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
		_		Number of Dominant Species
1. Quercus rubra	35	58.3%	FACU-	That are OBL, FACW, or FAC: 2 (A)
2. Pinus strobus		41.7%	FACU	Total Number of Dominant
3	0	0.0%		Species Across All Strata: 7 (B)
4	0	0.0%		
5	0	0.0%		Percent of dominant Species That Are OBL, FACW, or FAC:28.6%(A/B)
6	0	0.0%		
7	0	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	60	= Total Cove	r	Total % Cover of: Multiply by:
1. Acer rubrum	10	✔ 18.2%	FAC	$\begin{array}{ccc} \text{OBL species} & 0 & \text{x 1} = & 0 \\ \hline \end{array}$
2. Betula papyrifera	- -	9.1%	FACU	FACW species $0 \times 2 = 0$
3. Fagus grandifolia		✔ 18.2%	FACU	FAC species $20 \times 3 = 60$
4. Picea rubens	25	45.5%	FACU	FACU speci es 105 x 4 = 420
5. Betula alleghaniensis	E	9.1%	FAC	UPL species x 5 =
6.		0.0%		Column Totals: <u>125</u> (A) <u>480</u> (B)
7.		0.0%		Prevalence Index = $B/A = 3.840$
		= Total Cove	r	
Herb Stratum (Plot size: 5')				Hydrophytic Vegetation Indicators:
1.Vaccinium angustifolium	5	50.0%	FACU-	Rapid Test for Hydrophytic Vegetation
2. Trientalis borealis	5	50.0%	FAC	Dominance Test is > 50%
3.	0	0.0%		Prevalence Index is $\leq 3.0^{1}$
4.	0	0.0%		Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5.	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6.	0	0.0%		
7.	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must
8.	0	0.0%		be present, unless disturbed or problematic.
9.	0	0.0%		Definitions of Vegetation Strata:
10.	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11.	0	0.0%		at breast height (DBH), regardless of height.
12.	0	0.0%		
Woody Vine Stratum (Plot size:)	10	= Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		
Δ	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in height.
- Tr ₂	0	= Total Cove	r	
			•	
				Hydrophytic
				Vegetation Present? Yes O No •
Domarka: (Includo photo pumbaro baro	oot)			1
Remarks: (Include photo numbers here or on a separate sh	eet.)			

Profile Desc Depth	•	cribe to Matrix	the depth	needed to document the indicator or confirm Redox Features	the absence of indicators.)			
(inches)	Color (n	noist)	%	Color (moist) % Type 1 Lo	c ² Texture	Remarks		
0-4	10YR	3/2	100%		Loam			
4-12	10YR	4/6	100%		Fine Sandy Loam			
12-16	10YR	5/8	100%		Fine Sandy Loam			
						-		
1								
		=Depletio	n. RM=Red	uced Matrix, CS=Covered or Coated Sand Grains				
Hydric Soil					Indicators for Prob	lematic Hydric Soils : ³		
				Polyvalue Below Surface (S8) (LRR R, MLRA 149B)	2 cm Muck (A10)	(LRR K, L, MLRA 149B)		
Black His	ipedon (A2)			Thin Dark Surface (S9) (LRR R, MLRA 1498	3) Coast Prairie Red	lox (A16) (LRR K, L, R)		
_	n Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)	5 cm Mucky Peat	or Peat (S3) (LRR K, L, R)		
	Layers (A5)			Loamy Gleyed Matrix (F2)	Dark Surface (S7			
_	Below Dark S	urface (A	11)	Depleted Matrix (F3)		Surface (S8) (LRR K, L)		
	rk Surface (A1		,	Redox Dark Surface (F6)		e (S9) (LRR K, L) Magaza (E12) (LRR K, L, R)		
	uck Mineral (S			Depleted Dark Surface (F7)		Masses (F12) (LRR K, L, R)		
_	leyed Matrix (S			Redox Depressions (F8)		Piedmont Floodplain Soils (F19) (MLRA 149B) Mesic Spodic (TA6) (MLRA 144A, 145, 149B)		
Sandy R	edox (S5)				Red Parent Mate			
Stripped	Matrix (S6)				Very Shallow Dar			
Dark Sur	face (S7) (LRR	R, MLRA	(149B)		Other (Explain in			
³ Indicators of	of hydrophytic	vegetatio	n and wetla	and hydrology must be present, unless disturbed or p	problematic.			
Restrictive	Layer (if obse	erved):						
Туре:								
Depth (in	ches):				Hydric Soil Present?	Yes 🔾 No 🖲		
Remarks:								
Remarks.								



AN2 Wetland



AN2 Wetland



AN2 Wetland



AN2 Upland

			•	
Project/Site: Antrim Wind Project	City/County: Antrim		Sampling Date: 1	0-Aug-11
Applicant/Owner: Eolian Renewable Energy, LLC	State:	NH	Sampling Point:	AN3 Wet
Investigator(s): AF JG	Section, Township, Range: S.	Т.	R.	
Landform (hillslope, terrace, etc.): Ridgetop	Local relief (concave, convex, none)	hummocky	/ Slope:	0.0 % / 0.0
Subregion (LRR or MLRA):	Long.:		Dat	um:
Soil Map Unit Name:		NWI classific	cation: PFO	
	tly disturbed? Are "Normal Circ problematic? (If needed, expla sampling point locations, t	ain any answe	rs in Remarks.)	
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No	Is the Sampled Area within a Wetland? Ye	es 🖲 No 🔿		
Remarks: (Explain alternative procedures here or in a separate reported in the separate reported	prt.)			

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)	
Primary Indicators (minimum of one required;	Surface Soil Cracks (B6)		
Surface Water (A1)	✓ Water-Stained Leaves (B9)	Drainage Patterns (B10)	
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)	
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)	
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)	
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)	
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)	
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)	
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)	
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)	
Sparsely Vegetated Concave Surface (B8)		✓ FAC-neutral Test (D5)	
Field Observations:			
Surface Water Present? Yes O No 🔍	Depth (inches):		
Water Table Present? Yes O No •	Depth (inches):		
Saturation Present? (includes capillary fringe) Yes • No	Wetland Hy Depth (inches):0	rdrology Present? Yes 🖲 No 🔾	
Describe Recorded Data (stream gauge, monit	oring well, aerial photos, previous inspections), if av	ailable:	
Remarks:			

	1113	Dominant Species?		Sampling Point: AN3 Wet
Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
1. Acer rubrum	20	✓ 100.0%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)
2.	0	0.0%		
3.		0.0%		Total Number of Dominant Species Across All Strata: 5 (B)
4.	0	0.0%		Species Across All Strata: 5 (B)
5		0.0%		Percent of dominant Species
6.		0.0%		That Are OBL, FACW, or FAC:(A/B)
7		0.0%		Prevalence Index worksheet:
		= Total Cove	r	Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15')				OBL speci es 20 x 1 = 20
1. <u>Picea mariana</u>	15	37.5%	FACW-	FACW species $50 \times 2 = 100$
2. Acer rubrum	5	12.5%	FAC	FAC species 25 x 3 = 75
3. Vaccinium corymbosum	20	50.0%	FACW-	
4		0.0%		
5	0	0.0%		$\begin{array}{c} \text{UPL specilies} \qquad \underline{ } \qquad x \ 5 = \underline{ } \\ \hline \end{array} $
6	0	0.0%		Column Totals: 95 (A) 195 (B)
7	0	0.0%		Prevalence Index = $B/A = 2.053$
Herb Stratum (Plot size: 5')	40	= Total Cove	r	Hydrophytic Vegetation Indicators:
				Rapid Test for Hydrophytic Vegetation
1.Osmunda cinnamomea	15	42.9%	FACW	✓ Dominance Test is > 50%
2.Carex stricta	20	57.1%	OBL	✓ Prevalence Index is $\leq 3.0^{1}$
3	0	0.0%		Morphological Adaptations ¹ (Provide supporting
4	0	0.0%		data in Remarks or on a separate sheet)
5	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6	0	0.0%		
7	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8	0	0.0%		
9	0	0.0%		Definitions of Vegetation Strata:
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0	0.0%		at breast height (DBH), regardless of height.
12	0	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)	35	= Total Cove	r	greater than 3.28 ft (1m) tall.
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0	0.0%		height.
	0	= Total Cove	r	
				Hydrophytic
				Vegetation Present? Yes I No
Remarks: (Include photo numbers here or on a separate she	(at)			1
remains. (Include proto numbers here or on a separate sne	el.)			

	Matrix	the depth i	needed to document the indicator or confirm Redox Features	the absence of indicators.)	
(inches)	Color (moist)	%	Color (moist) % Type 1 Lo	c ² Texture Remarks	
0-5	10YR 3/2	100%		Sandy Loam	
5-10	2.5Y 4/2			Loamy Sand	
10+				Tedge	
		n. RM=Redu	iced Matrix, CS=Covered or Coated Sand Grains	² Location: PL=Pore Lining. M=Matrix	
Hydric Soil I				Indicators for Problematic Hydric Soils :	3
Histosol (•		Polyvalue Below Surface (S8) (LRR R, MLRA 149B)	2 cm Muck (A10) (LRR K, L, MLRA 149B)	
	bedon (A2)		Thin Dark Surface (S9) (LRR R, MLRA 1498	3) Coast Prairie Redox (A16) (LRR K, L, R)	
Black Hist			Loamy Mucky Mineral (F1) LRR K, L)	5 cm Mucky Peat or Peat (S3) (LRR K, L,	R)
	Sulfide (A4)		Loamy Gleyed Matrix (F2)	Dark Surface (S7) (LRR K, L)	
	Layers (A5) Below Dark Surface (A	11)	Depleted Matrix (F3)	Polyvalue Below Surface (S8) (LRR K, L)	
	k Surface (A12)	11)	Redox Dark Surface (F6)	Thin Dark Surface (S9) (LRR K, L)	
			Depleted Dark Surface (F7)	Iron-Manganese Masses (F12) (LRR K, L,	
	ck Mineral (S1) eyed Matrix (S4)		Redox Depressions (F8)	Piedmont Floodplain Soils (F19) (MLRA 14	
Sandy Red				Mesic Spodic (TA6) (MLRA 144A, 145, 14	9B)
·	Matrix (S6)			Red Parent Material (TF2)	
	ace (S7) (LRR R, MLRA	(149B)		Very Shallow Dark Surface (TF12)	
				Other (Explain in Remarks)	
		n and wetlar	nd hydrology must be present, unless disturbed or p		
	ayer (if observed):				
Type: lea					
Depth (incl	nes): 10			Hydric Soli Present? Yes S No C	
Remarks:					

Project/Site: Antrim Wind Project	City/County: Antrim	Sampling Date: 10-Aug-11
Applicant/Owner: Eolian Renewable Energy, LLC	State: NH	Sampling Point: AN3 Upland
Investigator(s): AF JG	Section, Township, Range: S. T.	R.
Landform (hillslope, terrace, etc.): Ridgetop	Local relief (concave, convex, none): none	Slope: 3.0 % / 1.7 °
Subregion (LRR or MLRA):	Long.:	Datum:
Soil Map Unit Name:	NWI class	ification:
	problematic? (If needed, explain any answ	present? Yes No Vers in Remarks.)
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No	Is the Sampled Area within a Wetland? Yes O No (٩
Remarks: (Explain alternative procedures here or in a separate rep bouldery	ort.)	

Wetland Hydrology Indicators:	Secondary Indicators (minimum of 2 required)		
Primary Indicators (minimum of one required;	Surface Soil Cracks (B6)		
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)	
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)	
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)	
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)	
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)	
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)	
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)	
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)	
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)	
Sparsely Vegetated Concave Surface (B8)		FAC-neutral Test (D5)	
		_ 、 ,	
Field Observations:			
Surface Water Present? Yes O No 🖲	Depth (inches):		
Water Table Present? Yes O No O	Depth (inches):	drology Present? Yes 🔿 No 🖲	
Saturation Present? (includes capillary fringe) Yes O No O	Wetland Hy Depth (inches):	drology Present? Yes 🔾 No 🖲	
Describe Recorded Data (stream gauge, monitor	pring well, aerial photos, previous inspections), if available	ailable:	
Remarks:			

		Dominant Species?		Sampling Point: AN3 Upland
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
	66	66.7%	FACU	Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)
O Disus stastus	33	33.3%	FACU	
		0.0%	17100	Total Number of Dominant
3	0	0.0%		Species Across All Strata: 5 (B)
4	0	0.0%		Percent of dominant Species
5	0	0.0%		That Are OBL, FACW, or FAC: 0.0% (A/B)
6	0	0.0%		Developer la devenadada et
7				Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	99	= Total Cove	-	Total % Cover of: Multiply by:
1. Picea rubens	10	100.0%	FACU	$\begin{array}{c} \text{OBL species} \qquad 0 \qquad \text{x 1} = 0 \\ \hline \end{array}$
2.	0	0.0%		FACW species $0 \times 2 = 0$
3.	0	0.0%		FAC species $0 \times 3 = 0$
4	0	0.0%		FACU species 115 x 4 = 460
5	0	0.0%		UPL species x 5 =
6	0	0.0%		Column Totals: 115 (A) 460 (B)
6	0	0.0%		
7				Prevalence Index = B/A = 4.000
Herb Stratum (Plot size: 5')	10	= Total Cove		Hydrophytic Vegetation Indicators:
1.Quercus rubra	3	✓ 50.0%	FACU-	Rapid Test for Hydrophytic Vegetation
2.Vaccinium angustifolium	3	50.0%	FACU-	Dominance Test is > 50%
3.	0	0.0%		□ Prevalence Index is \leq 3.0 ¹
4.	0	0.0%		Morphological Adaptations ¹ (Provide supporting
5.	0	0.0%		data in Remarks or on a separate sheet)
6.	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
7	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must
8.	0	0.0%		be present, unless disturbed or problematic.
9.				Definitions of Vegetation Strata:
10.	0			
11.		0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
12.	0	0.0%		at breast height (DBH), regardless of height.
12	06	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)		_		greater than 3.28 ft (1m) tall
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
2	0	0.0%		size, and woody plants less than 3.28 it tall.
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0	0.0%		height.
	0	= Total Cove	-	
				Hydrophytic Vegetation
				Present? Yes O No •
Remarks: (Include photo numbers here or on a separate she	et.)			

(inches)		Matrix		Redox Features	- _ .	. .	
0-3	Color (m		%	Color (moist) % Type 1 Loc ²	Texture	Remarks	
0.5	10YR	3/2	100%		Loam		
3-5	2.5Y	5/1	100%		Sand		
5-12	10YR	4/4	100%		Loamy Sand		
12+						bedrock	
					-		
						- <u> </u>	
¹ Type: C=Co	ncentration. D=	=Depletio	n. RM=Red	uced Matrix, CS=Covered or Coated Sand Grains ² Loca	ation: PL=Pore Lining. M=N	 Matrix	
	Indicators:					3	
Histosol				Polyvalue Below Surface (S8) (LRR R,		ienatic riyune sons .	
	ipedon (A2)			MLRA 149B)	☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B) ☐ Coast Prairie Redox (A16) (LRR K, L, R)		
Black Hi	•			Thin Dark Surface (S9) (LRR R, MLRA 149B)		ox (A16) (LRR K, L, R) or Peat (S3) (LRR K, L, R)	
Hydroge	n Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)	Dark Surface (S7)		
Stratified	Layers (A5)			Loamy Gleyed Matrix (F2)		Surface (S8) (LRR K, L)	
_	Below Dark S		11)	Depleted Matrix (F3)	Thin Dark Surface		
Thick Da	irk Surface (A1	2)		Redox Dark Surface (F6)	☐ Iron-Manganese Masses (F12) (LRR K, L, R)		
	uck Mineral (S			Depleted Dark Surface (F7) Redox Depressions (F8)	Piedmont Floodplain Soils (F19) (MLRA 149B)		
	leyed Matrix (S	(4)			Mesic Spodic (TA6) (MLRA 144A, 145, 149B)		
	edox (S5)				Red Parent Material (TF2)		
	Matrix (S6)		1400)		Very Shallow Dark Surface (TF12)		
	face (S7) (LRR				Other (Explain in	Remarks)	
³ Indicators	of hydrophytic	vegetatio	n and wetla	nd hydrology must be present, unless disturbed or probl	ematic.		
	Laver (if obse	erved):					
Restrictive						\circ \circ	
Restrictive Type: <u>k</u>	-					Yes 🔾 No 🖲	
	-				Hydric Soil Present?		
Type: k	edrock				Hydric Soll Present?		
Type: <u>t</u> Depth (in	edrock				Hydric Soll Present?		
Type: <u>t</u> Depth (in	edrock				Hydric Soli Present?		
Type: <u>t</u> Depth (in	edrock				Hyaric Soli Present?		
Type: <u>t</u> Depth (in	edrock				Hyaric Soli Present?		
Type: <u>t</u> Depth (in	edrock				Hyaric Soli Present?		
Type: <u>t</u> Depth (in	edrock				Hyaric Soli Present?		
Type: <u>t</u> Depth (in	edrock				Hyaric Soli Present?		
Type: <u>t</u> Depth (in	edrock				Hyaric Soli Present?		
Type: <u>t</u> Depth (in	edrock				Hyaric Soli Present?		
Type: <u>t</u> Depth (in	edrock				Hyaric Soli Present?		
Type: <u>t</u> Depth (in	edrock				Hyaric Soli Present?		
Type: <u>t</u> Depth (in	edrock				Hyaric Soli Present?		
Type: <u>t</u> Depth (in	edrock				Hyaric Soli Present?		
Type: <u>t</u> Depth (in	edrock				Hyaric Soli Present?		
Type: <u>t</u> Depth (in	edrock				Hydric Soli Present?		
Type: <u>t</u> Depth (in	edrock				Hydric Soli Present?		
Type: <u>t</u> Depth (in	edrock				Hyaric Soil Present?		
Type: <u>t</u> Depth (in	edrock				Hyaric Soil Present?		



AN3 Wetland



AN3 Upland

Project/Site: Antrim Wind Project		City/County:	Antrim			Sampling Date: 10-Aug-11		
Applicant/Owner: Eolian Renewable Energy, LLC				State: N	Н	Sampling Point:	AN4 W	et
Investigator(s): AF JG		Section, To	ownship, Ran	ige: S.	т.	R.		
Landform (hillslope, terrace, etc.): Ridgetop		Local relief (co	oncave, conv	ex, none):	hummocky	y Slope:	0.0 % /	0.0 °
Subregion (LRR or MLRA):	Lat.:			Long.:		Dat	um:	
Soil Map Unit Name:					NWI classifi	cation: PFO		
	aturally pr	y disturbed? roblematic? ampling p	(If need	led, explai		rs in Remarks.)		etc.
Hydrophytic Vegetation Present?YesNoHydric Soil Present?YesNoWetland Hydrology Present?YesNo			Sampled Are		; • No ()			
Remarks: (Explain alternative procedures here or in a separative VP-2	rate repor	t.)						

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)	
Primary Indicators (minimum of one required;	check all that apply)	Surface Soil Cracks (B6)	
Surface Water (A1)	✓ Water-Stained Leaves (B9)	Drainage Patterns (B10)	
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)	
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)	
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)	
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)	
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)	
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)	
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)	
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)	
Sparsely Vegetated Concave Surface (B8)	,,,,,,, _	✓ FAC-neutral Test (D5)	
Field Observations:			
Surface Water Present? Yes O No 🖲	Depth (inches):		
Water Table Present? Yes O No •	Depth (inches):		
Saturation Present? Yes • No •	Depth (inches):0	drology Present? Yes $ullet$ No $igloodow$	
	oring well, aerial photos, previous inspections), if ava	ailable:	
Remarks:			
sphagum carpet			

VEGETATION - Use scientific names of plai	nts	Dominant Species?		Sampling Point: AN4 Wet
	Absolute	Rel.Strat.		Dominance Test worksheet:
Tree Stratum (Plot size: 30')	% Cover		Status	Number of Dominant Species
1. Acer rubrum	50	100.0%	FAC	That are OBL, FACW, or FAC: (A)
2	0	0.0%		Total Number of Dominant
3	0	0.0%		Species Across All Strata: 4 (B)
4	0	0.0%		Demonstration of demonstration
5	0	0.0%		Percent of dominant Species That Are OBL, FACW, or FAC:100.0% (A/B)
6		0.0%		
7	0	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	50	= Total Cove	r	Total % Cover of: Multiply by:
1 Acces with mine	15	33.3%	FAC	0BL species x 1 =
2 Maastatum aammikaaam	20	 ✓ 33.3 % ✓ 66.7 % 	FAC FACW-	FACW species <u>35</u> x 2 = 70
		0.0%	FACVV-	FAC speciles $65 \times 3 = 195$
3				FACU species $0 \times 4 = 0$
4		0.0%		UPL species $0 \times 5 = 0$
5	0	0.0%		Column Totals: 100 (A) 265 (B)
6		0.0%		
7		0.0%		Prevalence Index = $B/A = 2.650$
Herb Stratum (Plot size: 5')	45	= Total Cove	r	Hydrophytic Vegetation Indicators:
	F	100.0%	FACIAL	Rapid Test for Hydrophytic Vegetation
1.Osmunda cinnamomea2.			FACW	✓ Dominance Test is > 50%
2 <u>.</u> 3.		0.0%		V Prevalence Index is \leq 3.0 ¹
		0.0%		Morphological Adaptations ¹ (Provide supporting
4 <u>.</u>	0	0.0%		data in Remarks or on a separate sheet)
5	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6	0	0.0%		
7	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8	0	0.0%		Definitions of Vegetation Strata:
9	0	0.0%		Demittons of Vegetation Strata.
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0	0.0%		at breast height (DBH), regardless of height.
12	0	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)	5	= Total Cove	r	greater than 3.28 ft (1m) tall
	0			
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
2	0	0.0%		
3		0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0	0.0%		height.
	0	= Total Cove	r	
				I hadrom kurtin
				Hydrophytic Vegetation
				Present? Yes No
Remarks: (Include photo numbers here or on a separate she	et.)			

_

Depth	inplion: (De	Matrix	the depth		dox Featu		iiiiiii ine a	absence of indicators.)			
(inches)	Color (%	Color (moist)	%	Type 1	Loc ²	Texture	Remarks		
0-6	10YR	3/2	100%					Loam			
6-10	2.5Y	4/1	100%					Fine Sandy Loam			
10+									Bedrock		
Type: C=Cor	ncentration. D	D=Depletio	n. RM=Redu	iced Matrix, CS=Cover	ed or Coat	ed Sand Gra	ins ² Loca	ition: PL=Pore Lining. M=	Matrix		
Hydric Soil								Indicators for Prot	plematic Hydric Soils : ³		
Histosol	• •			Polyvalue Belo MLRA 149B)	w Surface	(S8) (LRR R) (LRR K, L, MLRA 149B)		
	ipedon (A2)			Thin Dark Surf	ace (S9) (LRR R, MLR	A 149B)		dox (A16) (LRR K, L, R)		
Black His	n Sulfide (A4))		Loamy Mucky					t or Peat (S3) (LRR K, L, R)		
	Layers (A5)	/		Loamy Gleyed	Matrix (F2))		Dark Surface (S			
	Below Dark	Surface (A	11)	Depleted Matrix (F3)				Polyvalue Below Surface (S8) (LRR K, L) Thin Dark Surface (S9) (LRR K, L)			
Thick Da	rk Surface (A	.12)		Redox Dark Su					Masses (F12) (LRR K, L, R)		
Sandy M	uck Mineral (S1)		Depleted Dark		7)		Piedmont Floodplain Soils (F19) (MLRA 149B)			
	eyed Matrix ((S4)		Redox Depress	sions (F8)				A6) (MLRA 144A, 145, 149B)		
Sandy Re								Red Parent Mate	erial (TF2)		
	Matrix (S6) face (S7) (LR		1400)						rk Surface (TF12)		
								Other (Explain in	n Remarks)		
			n and wetlar	nd hydrology must be p	present, ur	iess disturb	ed or proble				
Restrictive I	•	served):									
Type: <u>b</u>								Hydric Soil Present?	Yes $lacksquare$ No $igodom$		
Depth (in	cnes):_10							,			
Remarks:											

Project/Site: Antrim Wind Project		City/County: Antrim				Sampling Date: 10-Aug-11		
Applicant/Owner: Eolian Renewable E	nergy, LLC		St	tate:	NH	Sampling Point:	AN4 Up	and
Investigator(s): AF JG		Section, To	wnship, Range	: S.	т.	R.		
Landform (hillslope, terrace, etc.):	Ridgetop	Local relief (co	ncave, convex,	none)	: convex	Slope:	0.0%/	0.0 °
Subregion (LRR or MLRA):	Lat.:		Lo	ng.:		Datum:		
Soil Map Unit Name:		-			NWI classi	fication:		
Are climatic/hydrologic conditions o Are Vegetation , Soil Are Vegetation , Soil Summary of Findings - At	, or Hydrology Significant , or Hydrology naturally p	tly disturbed? problematic?	(If needed	al Circu , expla	,	ers in Remarks.)		etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes No Yes No Yes No No		Sampled Area a Wetland?	Ye	es 🔿 No 🖲)		
Remarks: (Explain alternative prod	edures here or in a separate repo	ort.)						

	Secondary Indicators (minimum of 2 required)				
Wetland Hydrology Indicators:					
Primary Indicators (minimum of one required; check all that apply)					
Water-Stained Leaves (B9)	Drainage Patterns (B10)				
Aquatic Fauna (B13)	Moss Trim Lines (B16)				
Marl Deposits (B15)	Dry Season Water Table (C2)				
Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)				
Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)				
Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)				
Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)				
Thin Muck Surface (C7)	Shallow Aquitard (D3)				
	Microtopographic Relief (D4)				
	FAC-neutral Test (D5)				
Depth (inches):					
Depth (inches):	rdrology Present? Yes 🔿 No 🖲				
Wetland Hy Depth (inches):	rdrology Present? Yes 🔾 No 🖲				
pring well, aerial photos, previous inspections), if av	ailable:				
	Water-Stained Leaves (B9) Aquatic Fauna (B13) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Thin Muck Surface (C7) Other (Explain in Remarks) Depth (inches): Depth (inches): Depth (inches):				

Dominant				Sampling Point: AN4 Upland			
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:			
				Number of Dominant Species			
1. Quercus rubra	30	_	FACU-	That are OBL, FACW, or FAC: (A)			
2. Pinus strobus			FACU	Total Number of Dominant			
3. Picea rubens		✓ 31.3%	FACU	Species Across All Strata: 7 (B)			
4	0	0.0%		Demont of deminant Species			
5	0	0.0%		Percent of dominant Species That Are OBL, FACW, or FAC: <u>14.3%</u> (A/B)			
6	0	0.0%					
7	0	0.0%		Prevalence Index worksheet:			
Sapling/Shrub Stratum (Plot size: 15')	80	= Total Cove	r	Total % Cover of: Multiply by:			
1. Betula papyrifera	5	10.0%	FACU	$\begin{array}{c} \text{OBL species} \qquad 0 \qquad \text{x 1} = 0 \\ \hline \end{array}$			
2. Picea rubens	45	30.0%	FACU	FACW species $0 \times 2 = 0$			
3. Vaccinium angustifolium		50.0%	FACU-	FAC speci es $5 \times 3 = 15$			
4. Fagus grandifolia	-	10.0%	FACU	FACU speci es 135 x 4 = 540			
5.		0.0%		UPL species $0 \times 5 = 0$			
6.	0	0.0%		Column Totals: 140 (A) 555 (B)			
7.	0	0.0%		Prevalence Index = $B/A = 3.964$			
		= Total Cove	r				
Herb Stratum (Plot size: 5')				Hydrophytic Vegetation Indicators:			
1.Lycopodium obscurum	5	50.0%	FACU	Rapid Test for Hydrophytic Vegetation			
2. Abies balsamea	5	50.0%	FAC	Dominance Test is > 50%			
3.	0	0.0%		Prevalence Index is $\leq 3.0^{1}$			
4.	0	0.0%		Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)			
5.	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)			
6.	0	0.0%					
7.	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must			
8.	0	0.0%		be present, unless disturbed or problematic.			
9.	0	0.0%		Definitions of Vegetation Strata:			
10.	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter			
11.	0	0.0%		at breast height (DBH), regardless of height.			
12.	0	0.0%					
Woody Vine Stratum (Plot size:)	10	= Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall			
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of			
	0	0.0%		size, and woody plants less than 3.28 ft tall.			
3	0	0.0%					
л	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in height.			
т.,	-	= Total Cove	r	line grad			
			1				
				Hydrophytic			
				Vegetation Present? Yes O No •			
				1			
Remarks: (Include photo numbers here or on a separate she	eet.)						

Clock (mote) % Code (mote) % Type Loc ² Texture Remarks 0-3 1078 92 1006 Imm Imm<	Depth (inchos)		Matrix	-	Redox Features	- - .	. .
3.4 2.5Y 5/1 100% Fine Sand 4.12 10YR 4/6 100% Sandy Loam 12+					Color (moist) % Type Loc ²		Remarks
4-12 10YR 4/6 10% Sandy Loam 12+							
12+ Ledge 12+			5/1				
12+	4-12	10YR	4/6	100%		Sandy Loam	Ledge
Hydric Soil Indicators: Indicators for Problematic Hydric Soils : ³ Histosol (A1) Polyvalue Below Surface (S8) (LRR R, MLRA 149B) Histic Epipedon (A2) Thin Dark Surface (S9) (LRR R, MLRA 149B) Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) LRR K, L) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Sandy Redox (S5) Redox Depressions (F8) Stratifice Layer (if observed): Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Other (Explain in Remarks)	12+						
Hydric Soil Indicators: Indicators for Problematic Hydric Soils : ³ Histosol (A1) Polyvalue Below Surface (S8) (LRR R, MLRA 149B) Histic Epipedon (A2) Thin Dark Surface (S9) (LRR R, MLRA 149B) Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) LRR K, L) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Sandy Redox (S5) Redox Depressions (F8) Stratifice Layer (if observed): Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Other (Explain in Remarks)							
Hydric Soil Indicators: Indicators for Problematic Hydric Soils : ³ Histosol (A1) Polyvalue Below Surface (S8) (LRR R, MLRA 149B) Histic Epipedon (A2) Thin Dark Surface (S9) (LRR R, MLRA 149B) Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) LRR K, L) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Sandy Redox (S5) Redox Depressions (F8) Stratifice Layer (if observed): Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Other (Explain in Remarks)							
Hydric Soil Indicators: Indicators for Problematic Hydric Soils : ³ Histosol (A1) Polyvalue Below Surface (S8) (LRR R, MLRA 149B) Histic Epipedon (A2) Thin Dark Surface (S9) (LRR R, MLRA 149B) Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) LRR K, L) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Sandy Redox (S5) Redox Depressions (F8) Stratifice Layer (if observed): Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Other (Explain in Remarks)							
Hydric Soil Indicators: Indicators for Problematic Hydric Soils : ³ Histosol (A1) Polyvalue Below Surface (S8) (LRR R, MLRA 149B) Histic Epipedon (A2) Thin Dark Surface (S9) (LRR R, MLRA 149B) Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) LRR K, L) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Sandy Redox (S5) Redox Depressions (F8) Stratifice Layer (if observed): Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Other (Explain in Remarks)							
Hydric Soil Indicators: Indicators for Problematic Hydric Soils : ³ Histosol (A1) Polyvalue Below Surface (S8) (LRR R, MLRA 149B) Histic Epipedon (A2) Thin Dark Surface (S9) (LRR R, MLRA 149B) Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) LRR K, L) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Sandy Redox (S5) Redox Depressions (F8) Stratifice Layer (if observed): Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Other (Explain in Remarks)							
Hydric Soil Indicators: Indicators for Problematic Hydric Soils : ³ Histosol (A1) Polyvalue Below Surface (S8) (LRR R, MLRA 149B) Histic Epipedon (A2) Thin Dark Surface (S9) (LRR R, MLRA 149B) Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) LRR K, L) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Sandy Redox (S5) Redox Depressions (F8) Stratifice Layer (if observed): Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Other (Explain in Remarks)							
Hydric Soil Indicators: Indicators for Problematic Hydric Soils : ³ Histosol (A1) Polyvalue Below Surface (S8) (LRR R, MLRA 149B) Histic Epipedon (A2) Thin Dark Surface (S9) (LRR R, MLRA 149B) Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) LRR K, L) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Sandy Redox (S5) Redox Depressions (F8) Stratifice Layer (if observed): Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Other (Explain in Remarks)							
Hydric Soil Indicators: Indicators for Problematic Hydric Soils : ³ Histosol (A1) Polyvalue Below Surface (S8) (LRR R, MLRA 149B) Histic Epipedon (A2) Thin Dark Surface (S9) (LRR R, MLRA 149B) Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) LRR K, L) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Sandy Redox (S5) Redox Depressions (F8) Stratifice Layer (if observed): Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Other (Explain in Remarks)							
Hydric Soil Indicators: Indicators for Problematic Hydric Soils : ³ Histosol (A1) Polyvalue Below Surface (S8) (LRR R, MLRA 149B) Histic Epipedon (A2) Thin Dark Surface (S9) (LRR R, MLRA 149B) Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) LRR K, L) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Sandy Redox (S5) Redox Depressions (F8) Stratifice Layer (if observed): Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Other (Explain in Remarks)							
Histosol (A1) Polyvalue Below Surface (S8) (LRR R, MLRA 149B) Histosol (A2) MLRA 149B) Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) LRR K, L) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Sandy Redox (S5) Mexi A 149B) Stripped Matrix (S6) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Other (Explain in Remarks) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Present? Yes No	¹ Type: C=Cor	ncentration. D	=Depletio	on. RM=Red	uced Matrix, CS=Covered or Coated Sand Grains ² Lo	cation: PL=Pore Lining. M=	Matrix
Histosol (A1) Polyvalue Below Surface (S8) (LRR R, MLRA 149B) Coast Prairie Redox (A16) (LRR K, L, MLRA 149B) Histic Epipedon (A2) Thin Dark Surface (S9) (LRR R, MLRA 149B) Coast Prairie Redox (A16) (LRR K, L, R) Black Histic (A3) Loamy Mucky Mineral (F1) LRR K, L) 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Polyvalue Below Surface (S9) (LRR K, L) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thin Dark Surface (S9) (LRR K, L) Thick Dark Surface (A12) Redox Dark Surface (F6) Iron-Manganese Masses (F12) (LRR K, L, R) Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Piedmont Floodplain Soils (F19) (MLRA 149B) Sandy Redox (S5) Redox Depressions (F8) Mesic Spodic (TA6) (MLRA 144A, 145, 149B) Sandy Redox (S5) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Dark Surface (S7) (LRR R, MLRA 149B) Other (Explain in Remarks) Other (Explain in Remarks) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Yes No •	_			_		Indicators for Prob	elematic Hydric Soils : ³
Image: Mixex (A2) Image: Mixex (A3) Image: Mixex (A40) Image: Coast Prairie Redox (A16) (LRR K, L, R) Black Histic (A3) Image: Coast Prairie Redox (A16) (LRR K, L, R) Image: Coast Prairie Redox (A16) (LRR K, L, R) Hydrogen Sulfide (A4) Image: Coast Prairie Redox (A16) (LRR K, L, R) Image: Coast Prairie Redox (A16) (LRR K, L, R) Stratified Layers (A5) Image: Coast Prairie Redox (A16) (LRR K, L, R) Image: Coast Prairie Redox (A16) (LRR K, L, R) Depleted Below Dark Surface (A11) Image: Coast Prairie Redox (A16) (LRR K, L, R) Image: Coast Prairie Redox (A16) (LRR K, L, R) Thick Dark Surface (A12) Image: Coast Prairie Redox Surface (S7) (LRR K, L) Image: Coast Prairie Redox (A16) (LRR K, L, R) Sandy Muck Mineral (S1) Image: Depleted Dark Surface (F7) Polyvalue Below Sulf (F1) (LRR K, L, R) Sandy Redox (S5) Image: Redox Depressions (F8) Mesic Spodic (TA6) (MLRA 144A, 145, 149B) Sandy Redox (S5) Image: Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Dark Surface (S7) (LRR R, MLRA 149B) Image: Coast Prairie Redox					Polyvalue Below Surface (S8) (LRR R, MI RA 149R)	2 cm Muck (A10) (LRR K, L, MLRA 149B)
Black Histle (A3) Loamy Mucky Mineral (F1) LRR K, L) 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Dark Surface (S7) (LRR K, L) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Dark Surface (S7) (LRR K, L) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Dopleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Iron-Manganese Masses (F12) (LRR K, L, R) Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Piedmont Floodplain Soils (F19) (MLRA 149B) Sandy Redox (S5) Stripped Matrix (S6) Wesic Spodic (TA6) (MLRA 144A, 145, 149B) 3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Other (Explain in Remarks) 3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Hydric Soil Present? Yes No •						Coast Prairie Red	dox (A16) (LRR K, L, R)
Induction Image: Summe (M) Image: Depleted Selow Dark Surface (M) Image: Depleted Matrix (F2) Image: Depleted Matrix (F3) Image: Deple						🗌 5 cm Mucky Pea	t or Peat (S3) (LRR K, L, R)
Depleted Below Dark Surface (A11) Depleted Matrix (F3) Polyvalue Below Surface (S8) (LRR K, L) Thick Dark Surface (A12) Redox Dark Surface (F6) Thin Dark Surface (S9) (LRR K, L) Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Piedmont Floodplain Soils (F19) (MLRA 149B) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Mesic Spodic (TA6) (MLRA 144A, 145, 149B) Sandy Redox (S5) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Dark Surface (S7) (LRR R, MLRA 149B) Other (Explain in Remarks) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Present? Yes No •							
Image: Thick Dark Surface (A12) Redox Dark Surface (F6) Information Dark Surface (S9) Information Constrained (S9)			Surface (A	.11)	Depleted Matrix (F3)		
Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Intri-Marganese Masses (F12) (LRR K, E, K) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Piedmont Floodplain Soils (F19) (MLRA 149B) Sandy Redox (S5) Red Parent Material (TF2) Stripped Matrix (S6) Very Shallow Dark Surface (TF12) Dark Surface (S7) (LRR R, MLRA 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: Ledge Depth (inches): 12	_			,	Redox Dark Surface (F6)		
Redox Depressions (F8) Headmin Hoodplant Solis (F9) (MLKA 1476) Sandy Gleyed Matrix (S4) Mesic Spodic (TA6) (MLRA 144A, 145, 149B) Sandy Redox (S5) Red Parent Material (TF2) Stripped Matrix (S6) Very Shallow Dark Surface (TF12) Dark Surface (S7) (LRR R, MLRA 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: Ledge Depth (inches): 12	_				Depleted Dark Surface (F7)		
Sandy Redox (S5) Red Parent Material (TF2) Stripped Matrix (S6) Very Shallow Dark Surface (TF12) Dark Surface (S7) (LRR R, MLRA 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: Ledge Depth (inches): 12 No •					Redox Depressions (F8)		
□ Stripped Matrix (S6) □ Very Shallow Dark Surface (TF12) □ Dark Surface (S7) (LRR R, MLRA 149B) □ Other (Explain in Remarks) ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Other (Explain in Remarks) Restrictive Layer (if observed): Type: Ledge Hydric Soil Present? Yes No ●	Sandy Re	edox (S5)					
Image: Dark Surface (S7) (LRR R, MLRA 149B) Image: Other (Explain in Remarks) Image: Image	Stripped	Matrix (S6)					
Restrictive Layer (if observed): Type: Ledge Depth (inches): 12 Hydric Soil Present? Yes O No O	Dark Sur	face (S7) (LRI	r r, mlra	A 149B)			
Type: Ledge Depth (inches): 12 Hydric Soil Present? Yes O No O	³ Indicators of	of hydrophytic	vegetatio	n and wetla	and hydrology must be present, unless disturbed or pro	plematic.	
Type: Ledge Depth (inches): 12 Hydric Soil Present? Yes O No O	Restrictive I	aver (if obs	erved):				
Depth (inches): 12 Hydric Soil Present? Yes O No •							
Remarks:						Hydric Soil Present?	Yes 🔾 No 🖲
	Remarks:						
	Romanior						



AN4 Wetland



AN4 Upland

				•		
Project/Site: Antrim Wind Project	City/County:	Antrim		Sampling Date: 10-Aug-11		
Applicant/Owner: Eolian Renewable Energy, LLC		State:	ЛН	Sampling Point:	AN5 Wet	
Investigator(s): AF JG	Section, T	ownship, Range: S.	Т.	R.		
Landform (hillslope, terrace, etc.): Ridgetop	Local relief (c	oncave, convex, none)	hummock	y Slope:	0.0 % / 0.0	
Subregion (LRR or MLRA):		Long.:		Dat	um:	
Soil Map Unit Name:	-		NWI classifi	cation: PFO		
	tly disturbed? problematic? sampling p	Are "Normal Circu (If needed, expla point locations, t	in any answe	ers in Remarks.)		
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No		e Sampled Area n a Wetland? Ye	s 🖲 No 🔾			
Remarks: (Explain alternative procedures here or in a separate reportion is a separate report of the separate repo	ort.)					

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)
Primary Indicators (minimum of one required;	Surface Soil Cracks (B6)	
Surface Water (A1)	✓ Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2)	 Oxidized Rhizospheres along Living Roots (C3) 	Saturation Visible on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)		FAC-neutral Test (D5)
		_ 、 /
Field Observations:		
Surface Water Present? Yes O No O	Depth (inches):	
Water Table Present? Yes O No •	Depth (inches):	·· • • •
Saturation Present? (includes capillary fringe) Yes • No	Wetland Hyd	drology Present? Yes $ullet$ No $igloodow$
	oring well, aerial photos, previous inspections), if ava	ailable:
Remarks:		
Sphagum carpet		

DominantSpecies?				Sampling Point: AN5 Wet				
Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:				
1. Acer rubrum	15	✓ 100.0%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)				
2.	0	0.0%						
3.		0.0%		Total Number of Dominant Species Across All Strata: 4 (B)				
4	0	0.0%		Species Across All Strata: 4 (B)				
5	0	0.0%		Percent of dominant Species				
6		0.0%		That Are OBL, FACW, or FAC:100.0% (A/B)				
7		0.0%		Prevalence Index worksheet:				
Sapling/Shrub Stratum (Plot size: 15')		= Total Cover		Total % Cover of: Multiply by:				
		62.5%	54014	OBL species 0 x 1 = 0				
1. Vaccinium corymbosum			FACW-	FACW species 96 x 2 = 192				
2. Picea mariana	10	12.5%	FACW-	FAC species 25 x 3 = 75				
3. Spiraea latifolia		25.0%	FAC+	FACU species 0 x 4 = 0				
4	0	0.0%	·	UPL species $0 \times 5 = 0$				
5	0	0.0%	. <u> </u>					
6	0	0.0%	·	Column Totals: 121 (A) 267 (B)				
7	0	0.0%		Prevalence Index = $B/A = 2.207$				
Herb Stratum (Plot size: 5')	40	= Total Cover	-	Hydrophytic Vegetation Indicators:				
		✓ 100.0%	FACIAL	Rapid Test for Hydrophytic Vegetation				
1.Scirpus cyperinus 2.	66		FACW+	✓ Dominance Test is > 50%				
2 <u>.</u> 3.	0		·	✓ Prevalence Index is \leq 3.0 ¹				
3 <u>.</u> 4.	0	0.0%	·	Morphological Adaptations ¹ (Provide supporting				
4 <u>.</u> 5.	0			data in Remarks or on a separate sheet)				
	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)				
6	0	0.0%	·					
7	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
8	0	0.0%		Definitions of Vegetation Strata:				
9	0	0.0%		Demittions of Vegetation Strata.				
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter				
11	0	0.0%		at breast height (DBH), regardless of height.				
12	0 66	= Total Cover		Sapling/shrub - Woody plants less than 3 in. DBH and				
Woody Vine Stratum (Plot size:)	00			greater than 3.28 ft (1m) tall				
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of				
2	0	0.0%		size, and woody plants less than 3.28 ft tall.				
3	0	0.0%	·	Woody vine - All woody vines greater than 3.28 ft in				
4	0	0.0%		height.				
	0	= Total Cover	-					
				Hydrophytic				
				Vegetation				
				Present? Yes VO V				
				1				
Remarks: (Include photo numbers here or on a separate she	et.)							

	th needed to document the indicator or confirm the	absence of indicators.)
Depth Matrix (inches) Color (moist) %	Redox Features Color (moist) % Type 1 Loc ²	- Texture Remarks
0-27 <u>10YR</u> 2/1		Peaty Muck bedrock
		·
1 Turney C. Concentration D. Depletion BM D	aduced Matrix, CS, Covered or Costed Sand Crains, 21 ac	ation: DL Doro Lining M Matrix
	educed Matrix, CS=Covered or Coated Sand Grains ² Loca	2
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils : 3
Histosol (A1)	Polyvalue Below Surface (S8) (LRR R, MLRA 149B)	2 cm Muck (A10) (LRR K, L, MLRA 149B)
Histic Epipedon (A2)	Thin Dark Surface (S9) (LRR R, MLRA 149B)	Coast Prairie Redox (A16) (LRR K, L, R)
Black Histic (A3)	Loamy Mucky Mineral (F1) LRR K, L)	5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Dark Surface (S7) (LRR K, L)
Stratified Layers (A5)	Depleted Matrix (F3)	Polyvalue Below Surface (S8) (LRR K, L)
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	Thin Dark Surface (S9) (LRR K, L)
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	Iron-Manganese Masses (F12) (LRR K, L, R)
Sandy Muck Mineral (S1)	Redox Depressions (F8)	Piedmont Floodplain Soils (F19) (MLRA 149B)
Sandy Gleyed Matrix (S4)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
Sandy Redox (S5)		Red Parent Material (TF2)
Stripped Matrix (S6)		Very Shallow Dark Surface (TF12)
Dark Surface (S7) (LRR R, MLRA 149B)		Other (Explain in Remarks)
³ Indicators of hydrophytic vegetation and we	tland hydrology must be present, unless disturbed or probl	lematic.
Restrictive Layer (if observed):		
Type: Bedrock		Hydric Soil Present? Yes $ullet$ No $igodow$
Depth (inches): 27		
Remarks:		

		0					
Project/Site: Antrim Wind Project	City/County: Antrim	Sampling Date: 10-Aug-11					
Applicant/Owner: Eolian Renewable Energy, LLC	State: NH	Sampling Point: AN5 Upland					
Investigator(s): AF JG	Section, Township, Range: S. T.	R.					
Landform (hillslope, terrace, etc.): Ridgetop	Local relief (concave, convex, none): hummock	xy Slope: 5.0 % / 2.9°					
Subregion (LRR or MLRA): Lat.:	Long.:	Datum:					
Soil Map Unit Name:	NWI classif	ication:					
Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.) Are Vegetation , Soil , or Hydrology related to the site typical for this time of year? Yes No (If no, explain in Remarks.) Are Vegetation , Soil , or Hydrology related to the site typical for this time of year? Yes No (If no, explain in Remarks.) Are Vegetation , Soil , or Hydrology related to the site typical for this time of year? Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.							
Hydrophytic Vegetation Present?YesNoHydric Soil Present?YesNoWetland Hydrology Present?YesNo	Is the Sampled Area within a Wetland? Yes O No •)					
Remarks: (Explain alternative procedures here or in a separate repo	ort.)						

	Secondary Indicators (minimum of 2 required)				
Wetland Hydrology Indicators:					
Primary Indicators (minimum of one required; check all that apply)					
Water-Stained Leaves (B9)	Drainage Patterns (B10)				
Aquatic Fauna (B13)	Moss Trim Lines (B16)				
Marl Deposits (B15)	Dry Season Water Table (C2)				
Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)				
Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)				
Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)				
Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)				
Thin Muck Surface (C7)	Shallow Aquitard (D3)				
	Microtopographic Relief (D4)				
	FAC-neutral Test (D5)				
Depth (inches):					
Depth (inches):	drology Present? Yes 🔿 No 🖲				
Wetland Hy Depth (inches):	drology Present? Yes \bigcirc No $ullet$				
pring well, aerial photos, previous inspections), if available	ailable:				
	Water-Stained Leaves (B9) Aquatic Fauna (B13) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Thin Muck Surface (C7) Other (Explain in Remarks) Depth (inches): Depth (inches): Wetland Hy				

Dominant				Sampling Point: AN5 Upland			
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:			
	33	39.8%	FACU	Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)			
	50	 ✓ 39.8 % ✓ 60.2% 	FACU	That are OBL, FACW, or FAC: (A)			
			FACU	Total Number of Dominant			
3	0	0.0%		Species Across All Strata: 6 (B)			
4	0	0.0%		Percent of dominant Species			
5	0	0.0%		That Are OBL, FACW, or FAC:(A/B)			
6		0.0%					
7	0	0.0%		Prevalence Index worksheet:			
Sapling/Shrub Stratum (Plot size: 15')	83	= Total Cove	r	Total % Cover of: Multiply by: 0BL species 0 x 1 = 0			
1. Vaccinium corymbosum	5	100.0%	FACW-	· · · · · · · · · · · · · · · · · · ·			
2.		0.0%					
3.	0	0.0%		FAC species $0 \times 3 = 0$			
4.	0	0.0%		FACU species $94 x 4 = 376$			
···	0	0.0%		UPL species $0 \times 5 = 0$			
5	0	0.0%		Column Totals: 99 (A) 386 (B)			
6	0	0.0%					
7		= Total Cove	r	Prevalence Index = B/A = <u>3.899</u>			
Herb Stratum (Plot size: 5')				Hydrophytic Vegetation Indicators:			
1.Gaultheria procumbens	3	27.3%	FACU	Rapid Test for Hydrophytic Vegetation			
2.Vaccinium angustifolium	5	✔ 45.5%	FACU-	Dominance Test is > 50%			
3.Quercus rubra	3	27.3%	FACU-	Prevalence Index is $\leq 3.0^{1}$			
4.	0	0.0%		Morphological Adaptations ¹ (Provide supporting			
5.		0.0%		data in Remarks or on a separate sheet)			
6.	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)			
7		0.0%		¹ Indicators of hydric soil and wetland hydrology must			
8.				be present, unless disturbed or problematic.			
9.	0			Definitions of Vegetation Strata:			
9. 10.	0						
	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter			
11	0	0.0%		at breast height (DBH), regardless of height.			
12	0	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and			
Woody Vine Stratum (Plot size:)	11	= Total Cove	r	greater than 3.28 ft (1m) tall			
	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of			
2	0	0.0%		size, and woody plants less than 3.28 ft tall.			
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in			
4.	0	0.0%		height.			
	0	= Total Cove	r				
				Hydrophytic			
				Vegetation Present? Yes O No •			
Demonto (Include abote and Include a				1			
Remarks: (Include photo numbers here or on a separate she	eet.)						

Depth (inches)	Matri		Redox Features			- ·		
	Color (moist)	%	Color (moist) % Type 1	Loc ²	Texture	Remarks		
0-4	10YR 3/3				Loam			
4-10	2.5Y 5/1				Fine Loamy Sand			
10-16	10YR 4/4				Fine Sandy Loam			
						·		
1				21				
	-	euon. KM=Redu	uced Matrix, CS=Covered or Coated Sand Grains	s ∠roca				
<u> </u>	Indicators:		Polyvalue Below Surface (S8) (LRR R,		Indicators for Problematic Hydric Soils : ³			
Histosol (A1) Histic Epipedon (A2)			MLRA 149B)			(LRR K, L, MLRA 149B)		
Black His			Thin Dark Surface (S9) (LRR R, MLRA 1	149B)		ox (A16) (LRR K, L, R)		
Hydrogen Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)			or Peat (S3) (LRR K, L, R)		
Stratified Layers (A5)			Loamy Gleyed Matrix (F2)		Dark Surface (S7)	Gurface (S8) (LRR K, L)		
Depleted Below Dark Surface (A11)			Depleted Matrix (F3)		Thin Dark Surface			
Thick Da	rk Surface (A12)		Redox Dark Surface (F6)			Masses (F12) (LRR K, L, R)		
_	uck Mineral (S1)		Depleted Dark Surface (F7) Redox Depressions (F8)		Piedmont Floodplain Soils (F19) (MLRA 149B)			
	leyed Matrix (S4)				Mesic Spodic (TA6) (MLRA 144A, 145, 149B)			
Sandy Redox (S5)					Red Parent Mater	ial (TF2)		
Stripped Matrix (S6) Dark Surface (S7) (LRR R, MLRA 149B)					Very Shallow Dark			
					Other (Explain in	Remarks)		
³ Indicators of	of hydrophytic vegeta	ition and wetla	nd hydrology must be present, unless disturbed	or probl	ematic.			
	Layer (if observed)	:						
Туре:					Hydric Soil Present?	Yes 🔿 No 🖲		
Depth (in	ches):				Tigune son rresent.			
Remarks:								



AN5 Upland



AN5 Wetland

Project/Site: Antrim Wind Project	City/County:	Antrim			Sampling Date: 10-Aug-11		
Applicant/Owner: Eolian Renewable Energy, LLC		:	State: NH		Sampling Point:	AN6 Wet	
Investigator(s): AF JG	Section, T	ownship, Rang	e: S.	т.	R.		
Landform (hillslope, terrace, etc.): Hillside	Local relief (concave, convex, none): flat Slope: 0.0 % / (0.0 % / 0.0 °	
Subregion (LRR or MLRA):	Long.: Datum:					um:	
Soil Map Unit Name:	p.	NWI classification: PFO					
	ntly disturbed? problematic? sampling p	(If neede	d, explain	5	ers in Remarks.)		
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No		e Sampled Area in a Wetland?	^a Yes	• No C)		
Remarks: (Explain alternative procedures here or in a separate rep Isolated	ort.)						

Wetland Hydrology Indicators:	Secondary Indicators (minimum of 2 required)								
Primary Indicators (minimum of one required;	Surface Soil Cracks (B6)								
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)							
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)							
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)							
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)							
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)							
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)							
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)							
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)							
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)							
Sparsely Vegetated Concave Surface (B8)		✓ FAC-neutral Test (D5)							
Field Observations:									
Surface Water Present? Yes O No 🖲	Depth (inches):								
Water Table Present? Yes O No 🖲	Depth (inches):								
Saturation Present? Yes Solution View No	Wetland Hyd Depth (inches):0	and Hydrology Present? Yes 💿 No 🔿							
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:									
Remarks:									
sphagum carpet									
<u> </u>									

	Sampling Point: AN6 Wet				
Tree Stratum (Plot size: 30')	Absolute % Cover		Indicator Status	Dominance Test worksheet:	
1. Acer rubrum	25	✓ 50.0%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: 6 (A)	
O Detaile elle elevelenete	25	✓ 50.0%	FAC		
-		0.0%		Total Number of Dominant	
		0.0%		Species Across All Strata: <u>6</u> (B)	
4	0	0.0%		Percent of dominant Species	
5		0.0%		That Are OBL, FACW, or FAC: 100.0% (A/B)	
6		0.0%			
7				Prevalence Index worksheet:	
Sapling/Shrub Stratum (Plot size: 15')	50	= Total Cove	r	Total % Cover of: Multiply by:	
1. Vaccinium corymbosum	20	36.4%	FACW-	OBL species $15 \times 1 = 15$	
2. Acer rubrum		18.2%	FAC	FACW species 111 x 2 = 222	
		45.5%	FACW-	FAC species $80 \times 3 = 240$	
4		0.0%		FACU species $0 \times 4 = 0$	
F		0.0%		UPL species $0 \times 5 = 0$	
C		0.0%		Column Totals: 206 (A) 477 (B)	
7					
<i>I</i>		0.0%		Prevalence Index = B/A = 2.316	
Herb Stratum (Plot size: 5')	55	= Total Cove	r	Hydrophytic Vegetation Indicators:	
1. Iris versicolor	15	14.9%	OBL	Rapid Test for Hydrophytic Vegetation	
2.Coptis trifolia	33	32.7%	FACW	✓ Dominance Test is > 50%	
3 Correge considerale		19.8%	FAC-	✓ Prevalence Index is ≤3.0 1	
a-	-			Morphological Adaptations ¹ (Provide supporting	
4.Osmunda cinnamomea5.			FACW	data in Remarks or on a separate sheet)	
	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)	
6	0	0.0%			
7	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
8	0	0.0%		Definitions of Vegetation Strata:	
9	0	0.0%		Demitions of Vegetation Strata.	
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter	
11	0	0.0%		at breast height (DBH), regardless of height.	
12	0	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and	
Woody Vine Stratum (Plot size:)	101	= Total Cove	r	greater than 3.28 ft (1m) tall	
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of	
2	0	0.0%		size, and woody plants less than 3.28 ft tall.	
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in	
4	0	0.0%		height.	
	0	= Total Cove	r	ů –	
	0	- 10101 0010	•		
				Hydrophytic	
				Vegetation V A N	
				Present? Yes $ullet$ No $igcup$	
				<u> </u>	
Remarks: (Include photo numbers here or on a separate she	et.)				

Profile Desc Depth	ription: (Des		the depth				nfirm the	absence of indicators.)		
(inches)	Color (r	Matrix noist)	- % -	Color (moist)	dox Featu %	Type 1	Loc ²	Texture	Remarks	
0-4	10YR	3/2	100%	. ,				Loam		
4-8	2.5Y	4/1	100%					Sandy Loam		
8-9	2.5Y	6/1	100%					Loamy Sand	Bedrock	
9+										
									_	
								-		
		-								
¹ Type: C=Co	ncentration. D	=Depletio	on. RM=Red	uced Matrix, CS=Cover	ed or Coate	ed Sand Grai	ns ² Loca	ation: PL=Pore Lining. M=	Matrix	
Hydric Soil	Indicators:							Indicators for Prob	lematic Hydric Soils : ³	
Histosol				Polyvalue Belo MLRA 149B)	w Surface	(S8) (LRR R,		_	(LRR K, L, MLRA 149B)	
	ipedon (A2)			MLRA 1498)	aaa (CO) (I		1400)		lox (A16) (LRR K, L, R)	
Black His				Loamy Mucky			A 149D)	5 cm Mucky Peat	or Peat (S3) (LRR K, L, R)	
	n Sulfide (A4)							Dark Surface (S7	/) (LRR K, L)	
	Layers (A5)			Depleted Matri				Polyvalue Below	Surface (S8) (LRR K, L)	
	Below Dark S		11)	Redox Dark Su				Thin Dark Surfac	e (S9) (LRR K, L)	
	rk Surface (A1			Depleted Dark		7)			Masses (F12) (LRR K, L, R)	
	uck Mineral (S			Redox Depress		,			lain Soils (F19) (MLRA 149B)	
	leyed Matrix (S	54)							.6) (MLRA 144A, 145, 149B)	
	edox (S5) Matrix (S6)							Red Parent Mater		
	face (S7) (LRF		149B)					Very Shallow Dark Surface (TF12)		
								Other (Explain in	Remarks)	
³ Indicators of	of hydrophytic	vegetatio	n and wetla	nd hydrology must be p	present, un	less disturbe	ed or probl	ematic.		
	Layer (if obs	erved):								
Type: b	edrock								Yes \bullet No \bigcirc	
Depth (in	ches): 9							Hydric Soil Present?	Yes $oldsymbol{igstar}$ No $igcap$	
Remarks:										

		0		
Project/Site: Antrim Wind Project	City/County: Antrim	Sampling Date: 10-Aug-11		
Applicant/Owner: Eolian Renewable Energy, LLC	State: NH	Sampling Point: AN6 Upland		
Investigator(s): AF JG	Section, Township, Range: S. T.	R.		
Landform (hillslope, terrace, etc.): Hillside	Local relief (concave, convex, none): none	Slope: 8.0 % / 4.6°		
Subregion (LRR or MLRA):	Long.:	Datum:		
Soil Map Unit Name:	NWI classi	fication:		
	htly disturbed? Are "Normal Circumstances" problematic? (If needed, explain any answ	present? Yes No		
Hydrophytic Vegetation Present?YesNoHydric Soil Present?YesNoWetland Hydrology Present?YesNo	Is the Sampled Area within a Wetland? Yes O No (
Remarks: (Explain alternative procedures here or in a separate rep	ort.)			

	Secondary Indicators (minimum of 2 required)				
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)					
	Surface Soil Cracks (B6)				
Water-Stained Leaves (B9)	Drainage Patterns (B10)				
Aquatic Fauna (B13)	Moss Trim Lines (B16)				
Marl Deposits (B15)	Dry Season Water Table (C2)				
Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)				
Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)				
Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)				
Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)				
Thin Muck Surface (C7)	Shallow Aquitard (D3)				
	Microtopographic Relief (D4)				
	FAC-neutral Test (D5)				
Depth (inches):					
Depth (inches):	trology Present? Yes 🔿 No 🖲				
Wetland Hy Depth (inches):	ydrology Present? Yes 🔾 No 🖲				
pring well, aerial photos, previous inspections), if av	/ailable:				
	Water-Stained Leaves (B9) Aquatic Fauna (B13) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Thin Muck Surface (C7) Other (Explain in Remarks) Depth (inches): Depth (inches): Depth (inches):				

	int5	Dominant Species?		Sampling Point: AN6 Upland
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
1. Quercus rubra	45	56.3%	FACU-	Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)
	25	31.3%	FAC	
0 -	10	12.5%	FACU	Total Number of Dominant
		0.0%	TACO	Species Across All Strata: 7 (B)
4	0	0.0%		Percent of dominant Species
5	0	0.0%		That Are OBL, FACW, or FAC:(A/B)
6	0	0.0%		
7				Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	80	= Total Cove	r	Total % Cover of: Multiply by:
1. Fagus grandifolia	8	61.5%	FACU	OBL species $0 \times 1 = 0$
2. Picea rubens		38.5%	FACU	FACW species $0 \times 2 = 0$
		0.0%		FAC species $30 \times 3 = 90$
3	0	0.0%		FACU speciles $73 \times 4 = 292$
4	0	0.0%		UPL species $5 \times 5 = 25$
5	0	0.0%		Column Totals: 108 (A) 407 (B)
6				
7		0.0%		Prevalence Index = B/A = <u>3.769</u>
Herb Stratum (Plot size: <u>5</u> ')	13	= Total Cove	r	Hydrophytic Vegetation Indicators:
1 Televielle hannelle	5	33.3%	FAC	Rapid Test for Hydrophytic Vegetation
2.Medeola virginiana	5	 ✓ 33.3 % ✓ 33.3 % 	UPL	Dominance Test is > 50%
				□ Prevalence Index is \leq 3.0 ¹
3.Vaccinium angustifolium			FACU-	Morphological Adaptations ¹ (Provide supporting
4.Aralia nudicaulis	2		FACU	data in Remarks or on a separate sheet)
5		0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6	0	0.0%		1
7	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8	0	0.0%		
9	0	0.0%		Definitions of Vegetation Strata:
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0	0.0%		at breast height (DBH), regardless of height.
12	0	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)	15	= Total Cove	r	greater than 3.28 ft (1m) tall.
<u> </u>	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		We advise All use advised prostor than 2.00 ft in
Δ	0	0.0%	-	Woody vine - All woody vines greater than 3.28 ft in height.
т		= Total Cove	- <u> </u>	
			1	
				Hydrophytic
				Vegetation
				Present? Yes No •
Remarks: (Include photo numbers here or on a separate she	eet.)			

Profile Desc Depth	•	cribe to Matrix	the depth	needed to document the indicator or confirm th Redox Features	e absence of indicators.)	
(inches)	Color (r		%	Color (moist) % Type 1 Loc ²	Texture	Remarks
0-4	10YR	3/2	100%		Loam	
4-6	2.5Y	5/1	100%		Sandy Loam	
6-15	10YR	4/6	100%		Sandy Loam	
0.10		1/0	10070			
¹ Type: C=Cor	ncentration. D	=Depletio	n. RM=Red	uced Matrix, CS=Covered or Coated Sand Grains ² Lu	cation: PL=Pore Lining. M=I	 Matrix
	Indicators:					lematic Hydric Soils : ³
Histosol				Polyvalue Below Surface (S8) (LRR R,		
	oipedon (A2)			MLRA 149B)		(LRR K, L, MLRA 149B)
Black His				Thin Dark Surface (S9) (LRR R, MLRA 149B)		ox (A16) (LRR K, L, R)
_	n Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)		or Peat (S3) (LRR K, L, R)
	d Layers (A5)			Loamy Gleyed Matrix (F2)	Dark Surface (S7	
Depleted	d Below Dark S	urface (A	11)	Depleted Matrix (F3)	Thin Dark Surface	Surface (S8) (LRR K, L)
Thick Da	ark Surface (A1	2)		Redox Dark Surface (F6)		Masses (F12) (LRR K, L, R)
Sandy M	luck Mineral (S	1)		Depleted Dark Surface (F7)		ain Soils (F19) (MLRA 149B)
_	leyed Matrix (S			Redox Depressions (F8)		6) (MLRA 144A, 145, 149B)
_	edox (S5)				Red Parent Mater	
Stripped	Matrix (S6)				Very Shallow Dar	
Dark Sur	rface (S7) (LRF	R, MLRA	149B)		Other (Explain in	
³ Indicators (of hydronhytic	venetatio	n and wetla	nd hydrology must be present, unless disturbed or pro		(Condino)
				ind hydrology must be present, diffess distarbed of pre-		
	Layer (if obse	erved):				
Туре:					Hydric Soil Present?	Yes 🔿 No 🖲
Depth (in	ches):				Hydric Son Fresent:	res 🗧 NO 😌
Remarks:						



AN6 Wetland



AN6 Upland

				•	
Project/Site: Antrim Wind Project	City/County: Antrim		S	Sampling Date: 1	1-Aug-11
Applicant/Owner: Eolian Renewable Energy, LLC		State: NH		Sampling Point:	AN7 Wet
Investigator(s): AF JG	Section, Township,	Range: S.	т.	R.	
Landform (hillslope, terrace, etc.): Ridgetop	Local relief (concave, c	convex, none):	hummocky	Slope:	0.0 % / 0.0
Subregion (LRR or MLRA):		Long.:		Dat	um:
Soil Map Unit Name:		N	WI classifica	ation: PFO	
	problematic? (If r	"Normal Circum needed, explain ocations, tra	any answers	s in Remarks.)	
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No	Is the Sample within a Wetla		● No ○		
Remarks: (Explain alternative procedures here or in a separate report isolated, extends past rock wall, ledge pocket	prt.)				

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)		
Primary Indicators (minimum of one required;	Surface Soil Cracks (B6)			
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)		
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)		
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)		
Water Marks (B1)				
	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)		
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)		
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)		
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)		
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)		
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)		
Sparsely Vegetated Concave Surface (B8)		✓ FAC-neutral Test (D5)		
Field Observations:				
Surface Water Present? Yes O No •	Depth (inches):			
Water Table Present? Yes O No O	Depth (inches):	rology Present? Yes 🖲 No 🔿		
Saturation Present? (includes capillary fringe) Yes O No •	Wetland Hyd Depth (inches):	drology Present? Yes • No 🔾		
Describe Recorded Data (stream gauge, monit	oring well, aerial photos, previous inspections), if ava	ailable:		
Remarks:				

	Dominant Species?			
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
1. Acer rubrum	25	✓ 100.0%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)
2.		0.0%		
3.		0.0%		Total Number of Dominant Species Across All Strata: 4 (B)
4	0	0.0%		Species Across All Strata: (B)
5		0.0%		Percent of dominant Species
6.		0.0%		That Are OBL, FACW, or FAC: 75.0% (A/B)
7.		0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')		= Total Cove	r	Total % Cover of: Multiply by:
A	50	33.1%	FACW-	OBL species $0 \times 1 = 0$
	- <u></u>	16.6%	FAC	FACW speci es 116 x 2 = 232
	10	6.6%	FAC+	FAC species $60 \times 3 = 180$
		 ✓ 43.7% 	TAC+	FACU species $0 \times 4 = 0$
4	0	0.0%		UPL species $0 \times 5 = 0$
5	0	0.0%		Column Totals: 176 (A) 412 (B)
6				
7		0.0%		Prevalence Index = B/A = 2.341
Herb Stratum (Plot size: 5')	151	= Total Cove	r	Hydrophytic Vegetation Indicators:
1.Osmunda cinnamomea	66	✓ 100.0%	FACW	Rapid Test for Hydrophytic Vegetation
2.	0	0.0%		✓ Dominance Test is > 50%
3.		0.0%		✓ Prevalence Index is \leq 3.0 ¹
4.		0.0%		Morphological Adaptations ¹ (Provide supporting
5.	0	0.0%		data in Remarks or on a separate sheet)
6.	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
7.	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must
8.	0	0.0%		be present, unless disturbed or problematic.
9.	0	0.0%		Definitions of Vegetation Strata:
10.	0	0.0%		_
11.	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
12.	0	0.0%		a bleast height (bbh), regardless of height.
		= Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
Woody Vine Stratum (Plot size:) 1)	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
0	0			size, and woody plants less than 3.28 ft tall.
3	0	0.0%		
٥ ۸	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in height.
4		-		
	0	= Total Cove	ſ	
				Hydrophytic Vegetation Present? Yes No O
Remarks: (Include photo numbers here or on a separate sh	eet.)			Present? Tes C No C

Profile Desc Depth	ription: (De		the depth				nfirm the	absence of indicators.)			
(inches)	Color (Matrix moist)	%	Color (moist)	dox Featu	Type 1	Loc ²	Texture	Remarks		
0-6	10YR	3/2	100%					Loam			
6-7	2.5Y	5/1	100%					Fine Loamy Sand			
7-9	2.5Y	4/2	100%					Very Fine Sandy Loam			
9+									bedrock		
								-			
Type: C=Co)=Depletic	n RM=Redu	uced Matrix, CS=Cover	ed or Coat	ed Sand Gra	uins ² Loca	ation: PL=Pore Lining. M=	– Matrix		
Hydric Soil		/-Dopiotio	11. NW-Noac								
Histosol				Polyvalue Belov	w Surface	(S8) (LRR R			blematic Hydric Soils : ³		
	ipedon (A2)			MLRA 149B)) (LRR K, L, MLRA 149B) dox (A16) (LRR K, L, R)		
Black His				Thin Dark Surfa			A 149B)		t or Peat (S3) (LRR K, L, R)		
Hydroge	n Sulfide (A4)	1		Loamy Mucky I							
	Layers (A5)			Loamy Gleyed)		Dark Surface (S7) (LRR K, L) Polyvalue Below Surface (S8) (LRR K, L)			
	Below Dark		.11)	Depleted Matri					e (S9) (LRR K, L)		
	rk Surface (A			Redox Dark Su		-71			Masses (F12) (LRR K, L, R)		
	uck Mineral (Redox Depress		/)		Piedmont Floodplain Soils (F19) (MLRA 149B)			
·	leyed Matrix (S4)			3013 (10)				A6) (MLRA 144A, 145, 149B)		
	edox (S5) Matrix (S6)							Red Parent Material (TF2)			
	face (S7) (LR	R R. MLRA	4 149B)						rk Surface (TF12)		
				nd hydrology must be p	nresent ur	aloss disturb	ed or probl	Other (Explain in	Remarks)		
Restrictive I			Thund Hotel.		51050117 -	1000 0.000 2	<u>ou or proc.</u>				
Type: _b	•	Civeuy.									
Depth (in								Hydric Soil Present?	Yes $ullet$ No $igcap$		
Remarks:	·										
Kernurks.											

Project/Site: Antrim Wind Project	City/County:	Antrim			Sampling Date: 11-Aug-11			
Applicant/Owner: Eolian Renewable E	nergy, LLC		Sta	ate: N	Н	Sampling Point:	AN7 Upl	and
Investigator(s): AF JG		Section, To	wnship, Range:	S.	Т.	R.		
Landform (hillslope, terrace, etc.):	Ridgetop	Local relief (co	oncave, convex,	none):	concave	Slope:	12.5 % /	7.1 °
Subregion (LRR or MLRA):	Lat.:		Lon	ng.:	-	Datum:		
Soil Map Unit Name:		<u>1</u>			NWI classif	ication:		
Are climatic/hydrologic conditions of Are Vegetation , Soil Are Vegetation , Soil Summary of Findings - At	, or Hydrology Significant	tly disturbed? problematic?	•	al Circu explai	n any answe	ers in Remarks.)		etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes O No O Yes No O Yes No O		Sampled Area a Wetland?	Yes	s 🔿 No 🖲)		
Remarks: (Explain alternative pro	cedures here or in a separate repo	ort.)						

Secondary Indicators (minimum of 2 required)		
Secondary Indicators (minimum of 2 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)		
Iroloay Present? Yes 🔿 No 🖲		
logy Present? Yes 🔾 No 🖲		
ble:		

	11.5	Dominant Species?		Sampling Point: AN7 Upland
	Absolute	Rel.Strat.	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30')	% Cover		Status	Number of Dominant Species
1. Betula papyrifera	15	20.5%	FACU	That are OBL, FACW, or FAC: 1 (A)
2. Quercus rubra	33	✓ 45.2%	FACU-	Total Number of Dominant
3. Acer rubrum	25	34.2%	FAC	Species Across All Strata:6(B)
4	0	0.0%		
5	0	0.0%		Percent of dominant Species That Are OBL, FACW, or FAC:16.7% (A/B)
6	0	0.0%		
7	0	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	73	= Total Cove	r	Total % Cover of: Multiply by:
1. Fagus grandifolia	33	76.7%	FACU	OBL species $0 \times 1 = 0$
2. Picea rubens	10	23.3%	FACU	FACW species $0 \times 2 = 0$
3.	0	0.0%		FAC species 25 x 3 = 75
4.	0	0.0%		FACU species x 4 =484
5.	0	0.0%		UPL species $5 \times 5 = 25$
6.	0	0.0%		Column Totals: 151 (A) 584 (B)
7.	0	0.0%		Prevalence Index = $B/A = 3.868$
· ·		= Total Cove		
Herb Stratum (Plot size: 5')	43			Hydrophytic Vegetation Indicators:
1.Vaccinium angustifolium	25	✓ 71.4%	FACU-	Rapid Test for Hydrophytic Vegetation
2.Lycopodium obscurum	5	14.3%	FACU	Dominance Test is > 50%
3.Polygonatum pubescens	5	14.3%	UPL	Prevalence Index is \leq 3.0 ¹
4.	0	0.0%		Morphological Adaptations ¹ (Provide supporting
5.	0	0.0%		data in Remarks or on a separate sheet)
6.	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
7.	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must
8	0	0.0%		be present, unless disturbed or problematic.
9.	0	0.0%		Definitions of Vegetation Strata:
10.	0	0.0%		
11.	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
12.	0	0.0%		at breast height (bbh), regardiess of height.
		= Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
Woody Vine Stratum (Plot size:)				
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
2	0			
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0	0.0%		height.
	0	= Total Cove	r	
				Hydrophytic
				Vegetation
				Present? Yes No •
Remarks: (Include photo numbers here or on a separate she	et.)			

(inches)	Matrix	- ~ -	Redox Features	- T - 1	D I
0.0	Color (moist)	%	Color (moist) % Type 1 Loc ²		Remarks
0-2	10YR 3/2			Loam	
2-4	2.5YR 5/1			Fine Loamy Sand	
4-9	10YR 4/4			Fine Sandy Loam	bodrook
9+					bedrock
				-	
				-	
Type: C=Con	centration. D=Depletio	n. RM=Redu	uced Matrix, CS=Covered or Coated Sand Grains ² Loca	ation: PL=Pore Lining. M=	Matrix
Hydric Soil I		_		Indicators for Prob	lematic Hydric Soils : ³
Histosol (/			Polyvalue Below Surface (S8) (LRR R, MLRA 149B)	2 cm Muck (A10)) (LRR K, L, MLRA 149B)
	pedon (A2)		Thin Dark Surface (S9) (LRR R, MLRA 149B)	Coast Prairie Rec	lox (A16) (LRR K, L, R)
Black Hist			Loamy Mucky Mineral (F1) LRR K, L)	5 cm Mucky Pea	t or Peat (S3) (LRR K, L, R)
	n Sulfide (A4) Layers (A5)		Loamy Gleyed Matrix (F2)	Dark Surface (S	
	Below Dark Surface (A	11)	Depleted Matrix (F3)		Surface (S8) (LRR K, L)
	k Surface (A12)	,	Redox Dark Surface (F6)		e (S9) (LRR K, L)
	uck Mineral (S1)		Depleted Dark Surface (F7)		Masses (F12) (LRR K, L, R)
	eyed Matrix (S4)		Redox Depressions (F8)		lain Soils (F19) (MLRA 149B) \6) (MLRA 144A, 145, 149B)
Sandy Red	dox (S5)			Red Parent Mate	
Stripped N	Matrix (S6)				rk Surface (TF12)
Dark Surf	ace (S7) (LRR R, MLRA	149B)		Other (Explain in	
			nd hydrology must be present, unless disturbed or probl	ematic.	
		n and wetla			
³ Indicators of	f hydrophytic vegetatio	n and wetla			
³ Indicators of Restrictive La	f hydrophytic vegetatio ayer (if observed):	n and wetla			
³ Indicators of Restrictive La Type: <u>be</u>	f hydrophytic vegetatio ayer (if observed): edrock	n and wetla		Hydric Soil Present?	Yes 🔿 No 🖲
³ Indicators of Restrictive La Type: <u>be</u> Depth (incl	f hydrophytic vegetatio ayer (if observed): edrock	n and wetla		Hydric Soil Present?	Yes 🔿 No 🖲
³ Indicators of Restrictive La Type: <u>be</u>	f hydrophytic vegetatio ayer (if observed): edrock	n and wetla		Hydric Soil Present?	Yes 🔿 No 🖲
³ Indicators of Restrictive La Type: <u>be</u> Depth (incl	f hydrophytic vegetatio ayer (if observed): edrock	n and wetla		Hydric Soil Present?	Yes 🔿 No 🖲
³ Indicators of Restrictive La Type: <u>be</u> Depth (incl	f hydrophytic vegetatio ayer (if observed): edrock	n and wetla		Hydric Soil Present?	Yes 🔿 No 🖲
³ Indicators of Restrictive La Type: <u>be</u> Depth (incl	f hydrophytic vegetatio ayer (if observed): edrock	n and wetla		Hydric Soil Present?	Yes 🔿 No 🖲
³ Indicators of Restrictive La Type: <u>be</u> Depth (incl	f hydrophytic vegetatio ayer (if observed): edrock	n and wetla		Hydric Soil Present?	Yes 🔿 No 🖲
³ Indicators of Restrictive La Type: <u>be</u> Depth (incl	f hydrophytic vegetatio ayer (if observed): edrock	n and wetla		Hydric Soil Present?	Yes 🔿 No 🖲
³ Indicators of Restrictive La Type: <u>be</u> Depth (incl	f hydrophytic vegetatio ayer (if observed): edrock	n and wetla		Hydric Soil Present?	Yes 🔿 No 🖲
³ Indicators of Restrictive La Type: <u>be</u> Depth (incl	f hydrophytic vegetatio ayer (if observed): edrock	n and wetla		Hydric Soil Present?	Yes O No O
³ Indicators of Restrictive La Type: <u>be</u> Depth (incl	f hydrophytic vegetatio ayer (if observed): edrock	n and wetla		Hydric Soil Present?	Yes O No 🖲
³ Indicators of Restrictive La Type: <u>be</u> Depth (incl	f hydrophytic vegetatio ayer (if observed): edrock	n and wetla		Hydric Soil Present?	Yes O No 🖲
³ Indicators of Restrictive La Type: <u>be</u> Depth (incl	f hydrophytic vegetatio ayer (if observed): edrock	n and wetlar		Hydric Soil Present?	Yes O No O
³ Indicators of Restrictive La Type: <u>be</u> Depth (incl	f hydrophytic vegetatio ayer (if observed): edrock	n and wetla		Hydric Soil Present?	Yes O No O
³ Indicators of Restrictive La Type: <u>be</u> Depth (incl	f hydrophytic vegetatio ayer (if observed): edrock	n and wetla		Hydric Soil Present?	Yes O No O
³ Indicators of Restrictive La Type: <u>be</u> Depth (incl	f hydrophytic vegetatio ayer (if observed): edrock	n and wetla		Hydric Soil Present?	Yes O No O
³ Indicators of Restrictive La Type: <u>be</u> Depth (incl	f hydrophytic vegetatio ayer (if observed): edrock	n and wetlar		Hydric Soil Present?	Yes O No O
³ Indicators of Restrictive La Type: <u>be</u> Depth (incl	f hydrophytic vegetatio ayer (if observed): edrock	n and wetla		Hydric Soil Present?	Yes O No O
³ Indicators of Restrictive La Type: <u>be</u> Depth (incl	f hydrophytic vegetatio ayer (if observed): edrock	n and wetla		Hydric Soil Present?	Yes O No O



AN7 Wetland



AN7 Upland

Project/Site: Antrim Wind Project		City/County:	Antrim		Sampling Date: 1	1-Aug-11
Applicant/Owner: Eolian Renewable E	nergy, LLC		St	ate: NH	Sampling Point:	AN8 Wet
Investigator(s): AF JG		Section, T	ownship, Range	: S. T	. R.	
Landform (hillslope, terrace, etc.):	Terrace	Local relief (c	oncave, convex,	none): flat	Slope:	5.0 % / 2.9°
Subregion (LRR or MLRA):	Lat.:		Lor	ng.:	Dat	um:
Soil Map Unit Name:				NWI class	sification: PFO	-
Are Vegetation , Soil Are Vegetation , Soil Summary of Findings - At Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	, or Hydrology 🗌 naturally	Is th	(If needed		wers in Remarks.) s, important fe	
Remarks: (Explain alternative pro Narrow PFO drainage through bou		-	south with uplar	nd species		

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)			
Primary Indicators (minimum of one required;	Surface Soil Cracks (B6)				
Surface Water (A1)	✓ Water-Stained Leaves (B9)	✓ Drainage Patterns (B10)			
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)			
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)			
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)			
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)			
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)			
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)			
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)			
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)			
Sparsely Vegetated Concave Surface (B8)		✓ FAC-neutral Test (D5)			
		_ 、 /			
Field Observations:					
Surface Water Present? Yes O No 🖲	Depth (inches):				
Water Table Present? Yes O No 🖲	Depth (inches):				
Saturation Present? Yes • No ·	Depth (inches): 0 Wetland Hyd	drology Present? Yes $ullet$ No $igloo$			
Describe Recorded Data (stream gauge, monito	ring well, aerial photos, previous inspections), if ava	ailable:			
Remarks:					

	Sampling Point: AN8 Wet				
Tree Stratum (Plot size: 30')	Absolute % Cover	Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:	
1. Betula alleghaniensis	25	50.0%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)	
2 Assamtant	25	✓ 50.0%	FAC		
3		0.0%	1110	Total Number of Dominant	
		0.0%		Species Across All Strata: 5 (B)	
4	0	0.0%		Percent of dominant Species	
5				That Are OBL, FACW, or FAC:(A/B)	
6	0	0.0%			
7	0	0.0%		Prevalence Index worksheet:	
Sapling/Shrub Stratum (Plot size: 15')	50	= Total Cove	r	Total % Cover of: Multiply by:	
1 Maashali waxaa waxaa aa waxaa aa	5	23.8%	FACW-	OBL species x 1 =	
	10	✓ 23.6%✓ 47.6%	FAC+	FACW species 91 x 2 = 182	
		 47.0% 14.3% 	FACU	FAC species <u>63</u> x 3 = <u>189</u>	
4				FACU species3 x 4 =12	
4. Betula alleghaniensis		14.3%	FAC	UPL species $0 \times 5 = 0$	
5		0.0%		· · · · · · · · · · · · · · · · · · ·	
6	0	0.0%		Column Totals: <u>157</u> (A) <u>383</u> (B)	
7	0	0.0%		Prevalence Index = $B/A = 2.439$	
Herb Stratum (Plot size: 5')	21	= Total Cove	r	Hydrophytic Vegetation Indicators:	
				Rapid Test for Hydrophytic Vegetation	
1.Impatiens capensis	75	▶ 82.4%	FACW	✓ Dominance Test is > 50%	
2.Osmunda cinnamomea	5	5.5%	FACW	\checkmark Prevalence Index is $\leq 3.0^{-1}$	
3.Onoclea sensibilis	3	3.3%	FACW		
4. Carex intumescens	3	3.3%	FACW+	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5.violet spp.	5	5.5%		Problematic Hydrophytic Vegetation ¹ (Explain)	
6.	0	0.0%			
7.	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must	
8.	0	0.0%		be present, unless disturbed or problematic.	
9.	0	0.0%		Definitions of Vegetation Strata:	
10.	0	0.0%			
11		0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
12.		0.0%		at bloast height (BBH), regardless of height.	
12.				Sapling/shrub - Woody plants less than 3 in. DBH and	
Woody Vine Stratum (Plot size:)	91	= Total Cove	r	greater than 3.28 ft (1m) tall	
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of	
2	0	0.0%		size, and woody plants less than 3.28 ft tall.	
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in	
4	0	0.0%		height.	
	0	= Total Cove	r		
				Hydrophytic	
				Vegetation Present? Yes • No ·	
				present? Tos a no a	
				1	
Remarks: (Include photo numbers here or on a separate she	eet.)				

Profile Desc	ription: (Des	scribe to	the depth	needed to	document	the indic	ator or co	onfirm the	absence of indicators.)	
Depth (inches)		Matrix				dox Featu				
(inches)	Color (r		%	Color (moist)	%	Type 1	Loc ²	Texture	Remarks
0-8	2.5YR	2/1	100%						Loam	
8-10	2.5Y	5/1	100%						Fine Sand	
10-20	2.5Y	4/2	95%	2.5Y	6/1	5%	D	Μ	Sandy Loam	
			_							
	Centration D	=Denletio	n RM-Red	uced Matrix	CS=Cover	ed or Coate	d Sand Gr	ains 21 oc	ation: PL=Pore Lining. M=N	latrix
Hydric Soil		-Depietio			55-50ven					2
Histosol				Poly	value Relo	w Surface (58) (I PP E	2		enation ryune sons .
	ipedon (A2)			MLR	A 149B)	w Sunace (50) (LIXIX I	、 ,		(LRR K, L, MLRA 149B)
Black His				🗌 Thin	Dark Surf	ace (S9) (L	.RR R, MLF	RA 149B)		ox (A16) (LRR K, L, R)
	n Sulfide (A4)			🗌 Loar	ny Mucky I	Mineral (F1)) LRR K, L)			or Peat (S3) (LRR K, L, R)
	Layers (A5)			Loar	ny Gleyed	Matrix (F2)			Dark Surface (S7)	
	Below Dark S	Surface (A	.11)	Dep	leted Matri	x (F3)				urface (S8) (LRR K, L)
	rk Surface (A1			_	ox Dark Su				Thin Dark Surface	
	uck Mineral (S			Dep	leted Dark	Surface (F7	/)			/lasses (F12) (LRR K, L, R) ain Soils (F19) (MLRA 149B)
	eyed Matrix (S			Red	ox Depress	sions (F8)) (MLRA 144A, 145, 149B)
Sandy Re	edox (S5)								Red Parent Materi	
Stripped	Matrix (S6)								Very Shallow Dark	
Dark Sur	face (S7) (LRF	r R, MLRA	A 149B)						Other (Explain in I	
³ Indicators o	of hydrophytic	vegetatio	on and wetla	and hydrology	/ must be r	present un	ess disturk	ed or prob		,
								p		
Restrictive L	ayer (if obs	erved):								
Type:	(haa).								Hydric Soil Present?	Yes 💿 No 🔿
Depth (ind	:nes):								5	
Remarks:										

Project/Site: Antrim Wind Project		City/County: Antrim		Sampling Date: 1	1-Aug-11
Applicant/Owner: Eolian Renewable E	Energy, LLC	S	tate: NH	Sampling Point:	AN8 Upland
Investigator(s): AF JG		Section, Township, Range	»: S. T.	R.	
Landform (hillslope, terrace, etc.):	Terrace	Local relief (concave, convex	, none): none	Slope:	7.0 % / 4.0°
Subregion (LRR or MLRA):	Lat.:	Lo	ng.:	Date	um:
Soil Map Unit Name:			NWI classi	fication:	-
Are climatic/hydrologic conditions of Are Vegetation , Soil Are Vegetation , Soil Summary of Findings - At	, or Hydrology Significant	tly disturbed? Are "Norm problematic? (If needed	(If no, explain ir al Circumstances" I, explain any answ DNS, transects	present? Yes ()	
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes ○ No ● Yes ○ No ● Yes ○ No ●	Is the Sampled Area within a Wetland?	Yes 🔿 No 🖲)	
Remarks: (Explain alternative pro	ocedures here or in a separate repo	ort.)			

	Secondary Indicators (minimum of 2 required)			
Primary Indicators (minimum of one required; check all that apply)				
Stained Leaves (B9)	Drainage Patterns (B10)			
c Fauna (B13)	Moss Trim Lines (B16)			
eposits (B15)	Dry Season Water Table (C2)			
en Sulfide Odor (C1)	Crayfish Burrows (C8)			
ed Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)			
ce of Reduced Iron (C4)	Stunted or Stressed Plants (D1)			
Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)			
uck Surface (C7)	Shallow Aquitard (D3)			
. ,	Microtopographic Relief (D4)			
	FAC-neutral Test (D5)			
n (inches):				
n (inches):	rology Present? Yes \bigcirc No \odot			
n (inches):	rology Present? Yes 🔾 No 🖲			
erial photos, previous inspections), if avail	lable:			
	<pre>itained Leaves (B9) Fauna (B13) posits (B15) en Sulfide Odor (C1) d Rhizospheres along Living Roots (C3) e of Reduced Iron (C4) Iron Reduction in Tilled Soils (C6) ick Surface (C7) Explain in Remarks) (inches): (inches): (inches):</pre> Wetland Hydre			

	11.5	Dominant Species?		Sampling Point: AN8 Upland
	Absolute	Rel.Strat.	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30')	% Cover		Status	Number of Dominant Species
1. Quercus rubra	25	28.4%	FACU-	That are OBL, FACW, or FAC: 1 (A)
2. Pinus strobus	33	✓ 37.5%	FACU	Total Number of Dominant
3. Betula papyrifera	10	11.4%	FACU	Species Across All Strata:6(B)
4. Acer rubrum	20	✓ 22.7%	FAC	
5	0	0.0%		Percent of dominant Species That Are OBL_EACW_or_EAC16.7% (A/B)
6	0	0.0%		That Are OBL, FACW, or FAC: 16.7% (A/B)
7	0	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	88	= Total Cove	r	Total % Cover of: Multiply by: OBL species 0 x 1 = 0
1. Fagus grandifolia	40	80.0%	FACU	
2. Picea rubens	10	20.0%	FACU	FACW species $0 \times 2 = 0$
3.	0	0.0%		FAC species $20 \times 3 = 60$
4		0.0%		FACU species 119 x 4 = 476
5	0	0.0%		UPL species $\frac{26}{130}$ x 5 = $\frac{130}{130}$
C C	0	0.0%		Column Totals: 165 (A) 666 (B)
7	0	0.0%		$\frac{1}{2}$ Prevalence Index = B/A = 4.036
<i>I</i>	-	= Total Cove		Prevalence Index = $B/A = 4.036$
Herb Stratum (Plot size: 5')	50		1	Hydrophytic Vegetation Indicators:
1.Aralia nudicaulis	1	3.7%	FACU	Rapid Test for Hydrophytic Vegetation
2.Medeola virginiana		3.7%	UPL	Dominance Test is > 50%
3.Polygonatum pubescens		92.6%	UPL	Prevalence Index is \leq 3.0 1
4.	0	0.0%		Morphological Adaptations ¹ (Provide supporting
F				data in Remarks or on a separate sheet)
5 6.				\Box Problematic Hydrophytic Vegetation ¹ (Explain)
	0	0.0%		¹ Indicators of hydric coil and watland hydrology must
7	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8	0	0.0%		Definitions of Vegetation Strata:
9	0	0.0%		Demintions of Vegetation Strata.
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0	0.0%		at breast height (DBH), regardless of height.
12	0	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)	27	= Total Cove	r	greater than 3.28 ft (1m) tall
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0	0.0%		height.
	0	= Total Cove	r	
				Hydrophytic Vegetation Present? Yes O No O
Pomarks: (Include photo numbers here or on a consiste she	ot)			l
Remarks: (Include photo numbers here or on a separate she	el.)			

Profile Desc	ription: (Desc	ribe to	the depth	needed to document the indicator or confirm the	absence of indicators.)	
Depth (inches)		Matrix		Redox Features		5
	Color (m		%	Color (moist) % Type 1 Loc ²		Remarks
	10YR	3/2	100%		Loam	
4-6	2.5Y	5/1	100%		Loamy Sand	
6-8	10YR	4/4	100%		Very Fine Sandy Loam	
8+						Bedrock
				· · · · · · ·_	·	
¹ Type: C=Cor		Depletio	n. RM=Red	uced Matrix, CS=Covered or Coated Sand Grains ² Loc	ation: PL=Pore Lining. M=N	 Natrix
Hydric Soil						
Histosol				Polyvalue Below Surface (S8) (LRR R,		ematic Hydric Soils : ³
	ipedon (A2)			MLRA 149B)		(LRR K, L, MLRA 149B)
Black His				Thin Dark Surface (S9) (LRR R, MLRA 149B)		DX (A16) (LRR K, L, R)
	n Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)	Dark Surface (S7)	or Peat (S3) (LRR K, L, R)
Stratified	Layers (A5)			Loamy Gleyed Matrix (F2)		Surface (S8) (LRR K, L)
Depleted	Below Dark Su	irface (A	.11)	Depleted Matrix (F3)	Thin Dark Surface	
Thick Da	rk Surface (A12	?)		Redox Dark Surface (F6)		Masses (F12) (LRR K, L, R)
Sandy M	uck Mineral (S1)		Depleted Dark Surface (F7)		ain Soils (F19) (MLRA 149B)
Sandy GI	eyed Matrix (S4	1)		Redox Depressions (F8)		6) (MLRA 144A, 145, 149B)
	edox (S5)				Red Parent Mater	
	Matrix (S6)				Very Shallow Dar	< Surface (TF12)
Dark Sur	face (S7) (LRR	r, mlra	A 149B)		Other (Explain in	Remarks)
³ Indicators of	of hydrophytic v	regetatio	on and wetla	nd hydrology must be present, unless disturbed or prob	lematic.	
Restrictive L	ayer (if obse	rved):				
Type: B	edrock					
Depth (ind	ches): 8				Hydric Soil Present?	Yes 🔾 No 🖲
Remarks:						



AN8 Upland



AN8 Wetland



AN8 Wetland

							•	
Project/Site: Antrim Wind Project	Cit	y/County:	Antrim				Sampling Date: 11-Aug-11	
Applicant/Owner: Eolian Renewable Energy, LLC				State:	NH		Sampling Point:	AN10 Wet
Investigator(s): AF JG		Section, T	wnship, Ra	nge: S.		т.	R.	
Landform (hillslope, terrace, etc.): Hillside	Loc	cal relief (c	oncave, conv	vex, none	e): none	:	Slope:	10.0 % / 5.7 [°]
Subregion (LRR or MLRA):	at.:			Long.:			Dat	tum:
Soil Map Unit Name:	-				NWI cl	assif	ication: PFO	
	ally prob	listurbed? plematic? npling p	(If nee	ded, exp	2	Inswe	ers in Remarks.)	
Hydrophytic Vegetation Present?YesNoHydric Soil Present?YesNoWetland Hydrology Present?YesNo			Sampled An a Wetland		∕es ● N	lo C)	
Remarks: (Explain alternative procedures here or in a separate Small isolated PFO seep into skidder trail	report.)							

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)
Primary Indicators (minimum of one required;	check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1)	Water-Stained Leaves (B9)	✓ Drainage Patterns (B10)
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)		FAC-neutral Test (D5)
Field Observations:		
Surface Water Present? Yes No	Depth (inches): <u>1</u>	
Water Table Present? Yes O No O	Depth (inches):	drology Present? Yes $ullet$ No $igodoldsymbol{O}$
Saturation Present? (includes capillary fringe) Yes • No	Wetland Hy Depth (inches):	drology Present? Yes 🔍 No 🔾
Describe Recorded Data (stream gauge, monit	oring well, aerial photos, previous inspections), if available	ailable:
Remarks:		
drainage patterns saturated to surface, 1" flow	ving water near seep	

	ints	Dominant Species?		Sampling Point: AN10 Wet
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
1. Betula alleghaniensis	15	✓ 50.0%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: 5
2. Fraxinus pennsylvanica	45	50.0%	FACW	
3.		0.0%		Total Number of Dominant
4.		0.0%		Species Across All Strata:6 (B)
5.	0	0.0%		Percent of dominant Species
6.		0.0%		That Are OBL, FACW, or FAC: 83.3% (A/B)
7		0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')		= Total Cove	r	Total % Cover of: Multiply by:
	50		FAOL	OBL species 5 x 1 = 5
1. Acer pensylvanicum	45	✓ 76.9%✓ 23.1%	FACU	FACW species x 2 =176
2. Betula alleghaniensis			FAC	FAC speciles $30 \times 3 = 90$
3	0	0.0%		FACU speci es 50 x 4 = 200
4	0	0.0%		UPL species $0 \times 5 = 0$
5	0	0.0%		
6		0.0%		Column Totals: <u>173</u> (A) <u>471</u> (B)
7		0.0%		Prevalence Index = $B/A = 2.723$
Herb Stratum (Plot size: 5')	65	= Total Cove	r	Hydrophytic Vegetation Indicators:
1.Osmunda cinnamomea	33	42.3%	FACW	Rapid Test for Hydrophytic Vegetation
2. Impatiens capensis	40	51.3%	FACW	✓ Dominance Test is > 50%
3.Carex lurida	5	6.4%	OBL	✓ Prevalence Index is \leq 3.0 ¹
4.	0	0.0%		Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5.	0	0.0%		
6.	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
7.	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must
8.	0	0.0%		be present, unless disturbed or problematic.
9.	0	0.0%		Definitions of Vegetation Strata:
10.	0	0.0%		_
11.	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
12.	0	0.0%		at bleast height (DDH), regardless of height.
		= Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
Woody Vine Stratum (Plot size:) 1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
	0	0.0%		size, and woody plants less than 3.28 ft tall.
2 3	0	0.0%		
3 /	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in height.
4		-	-	neight.
	0	= Total Cove	r	
				Hydrophytic Vegetation Present? Yes • No O
Remarks: (Include photo numbers here or on a separate sh	eet.)			

Depth	ription: (De	scribe to Matrix	the depth	needed to d		t the indic dox Featu		onfirm the	absence of indicators.)				
(inches)	Color (moist)	%	Color (I	noist)	%	Type 1	Loc ²	Texture	Remarks			
0-6	10YR	3/2	100%						Sandy Loam	_			
6-10	2.5Y	4/2	90%	10YR	5/8	10%	С	М	Fine Sandy Loam				
10+										boul dery			
1 Turney C. Con		Doplatia							ation: DL Doro Lining M	—			
		=Depietio	in. Rivi=Reu	uceu Matrix, (_S=Cover	ed of Coale	eu sanu Gra	ains -Loca	ation: PL=Pore Lining. M=	2			
Hydric Soil Histosol				Date	value Del-	w Surface ((CO) (I DD F		_	lematic Hydric Soils : 3			
	(AT) ipedon (A2)				A 149B)	w surrace ((58) (LRR F	ζ,	2 cm Muck (A10)) (LRR K, L, MLRA 149B)			
Black His				🗌 Thin	Dark Surf	face (S9) (I	_RR R, MLF	RA 149B)	_	dox (A16) (LRR K, L, R)			
	n Sulfide (A4)			🗌 Loam	ny Mucky	Mineral (F1) LRR K, L)			t or Peat (S3) (LRR K, L, R)			
	Layers (A5)			Loamy Gleyed Matrix (F2)					Dark Surface (S7				
_	Below Dark S	Surface (A	.11)		eted Matr				Polyvalue Below Surface (S8) (LRR K, L)				
Thick Da	rk Surface (A	12)		Redox Dark Surface (F6)					Thin Dark Surface (S9) (LRR K, L) Iron-Manganese Masses (F12) (LRR K, L, R)				
Sandy M	uck Mineral (S	S1)				Surface (F	7)		 Piedmont Floodplain Soils (F19) (MLRA 149 				
Sandy G	leyed Matrix (S4)		Redox Depressions (F8)					Mesic Spodic (TA6) (MLRA 144A, 145, 149B)				
	edox (S5)								Red Parent Material (TF2)				
	Matrix (S6)								Very Shallow Dark Surface (TF12)				
Dark Sur	face (S7) (LR	r r, mlra	A 149B)						Other (Explain in	Remarks)			
³ Indicators of	of hydrophytic	vegetatio	n and wetla	nd hydrology	must be	present, un	less disturk	ed or probl	lematic.				
Restrictive I	Layer (if obs	erved):											
Type: b	ouldery												
Depth (in	ches): 10								Hydric Soil Present?	Yes $lacksquare$ No $igodom$			
Remarks:									1				

Investigator(s): AF JG Section, Township, Range: S. T. R. Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): none Slope: 15.0 % / Subregion (LRR or MLRA): Lat.: Long.: Datum: Soil Map Unit Name: NWI classification: Are climatic/hydrologic conditions on the site typical for this time of year? Yes Image: No Image: Image	/Site: Antrim Wind Project		City/County: Antrim		Sampling Date: 1	11-Aug-11	
Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): none Slope: 15.0 % / Subregion (LRR or MLRA): Lat.: Long.: Datum: Soil Map Unit Name: NWI classification:	nt/Owner: Eolian Renewable Ene	gy, LLC		State: NH	Sampling Point:	AN10 Uplai	nd
Subregion (LRR or MLRA): Lat.: Long.: Datum: Soil Map Unit Name: NWI classification: NWI classification: Are climatic/hydrologic conditions on the site typical for this time of year? Yes I No (If no, explain in Remarks.) Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes I No (Yes I needed, explain any answers in Remarks.) 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, explain and the statures of	gator(s): AF JG		Section, Township, Ran	ige: S.	T. R.	-	
Soil Map Unit Name: NWI classification: Are climatic/hydrologic conditions on the site typical for this time of year? Yes	m (hillslope, terrace, etc.): H	llside	Local relief (concave, conve	ex, none): none	Slope:	15.0 % /	8.5 °
Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.) Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) Summary of Findings - Attach site map showing sampling point locations, transects, important features, e	ion (LRR or MLRA):	Lat.:		Long.:	Da	tum:	
Are Vegetation , Soil , or Hydrology and an and any found in the explanation of the second se	p Unit Name:			NWI cla	ssification:		
Hydrophytic Vegetation Present? Yes O No 🔍	yetation, Soil,	or Hydrology Significant	tly disturbed? Are "Noi problematic? (If need	rmal Circumstance led, explain any an	es" present? Yes (c.
Hydric Soil Present? Yes No Is the Sampled Area within a Wetland? Yes No Wetland Hydrology Present? Yes No No Is the Sampled Area within a Wetland? Yes No	ic Soil Present?	Yes 🔾 No 🖲			, •		

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)				
Primary Indicators (minimum of one required;	check all that apply)	Surface Soil Cracks (B6)				
Surface Water (A1)						
High Water Table (A2)	Aquatic Fauna (B13)	Drainage Patterns (B10) Moss Trim Lines (B16)				
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)				
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)				
Sediment Deposits (B2)	 Oxidized Rhizospheres along Living Roots (C3) 	Saturation Visible on Aerial Imagery (C9)				
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)				
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)				
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aguitard (D3)				
Inundation Visible on Aerial Imagery (B7)	Microtopographic Relief (D4)					
Sparsely Vegetated Concave Surface (B8)	Uther (Explain in Remarks)	FAC-neutral Test (D5)				
Field Observations:						
Surface Water Present? Yes O No 💿	Depth (inches):					
Water Table Present? Yes O No •	Depth (inches):	drology Present? Yes 🔿 No 🖲				
Saturation Present? (includes capillary fringe) Yes O No O	Wetland Hyd Depth (inches):	drology Present? Yes 🔾 No 🖲				
Describe Recorded Data (stream gauge, monit	oring well, aerial photos, previous inspections), if ava	ailable:				
Remarks:						

	11.5	Dominant Species?		Sampling Point: AN10 Upland
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.		Dominance Test worksheet:
			Status	Number of Dominant Species
1. Tsuga canadensis	40	42.1%	FACU	That are OBL, FACW, or FAC: 2 (A)
2. Betula papyrifera	25	26.3%	FACU	Total Number of Dominant
3. Fraxinus pennsylvanica	15	15.8%	FACW	Species Across All Strata: 6 (B)
4. Picea rubens		15.8%	FACU	
5		0.0%		Percent of dominant Species That Are OBL, FACW, or FAC:33.3% (A/B)
6		0.0%		
7	0	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')		= Total Cove	r	Total % Cover of:Multiply by:OBL species0x 1 = 0
1. Acer rubrum	50	76.9%	FAC	
2. Picea rubens	15	23.1%	FACU	FACW species $15 \times 2 = 30$
3.		0.0%		FAC species $\frac{70}{100}$ x 3 = $\frac{210}{100}$
4.		0.0%		FACU species 155 x 4 = 620
5.	0	0.0%		UPL species $0 \times 5 = 0$
e	0	0.0%		Column Totals: 240 (A) 860 (B)
7	0	0.0%		Prevalence Index = B/A = 3.583
<i>I</i>		= Total Cove		Prevalence Index = B/A = <u>3.583</u>
Herb Stratum (Plot size: 5')	65		1	Hydrophytic Vegetation Indicators:
1. Trientalis borealis	20	25.0%	FAC	Rapid Test for Hydrophytic Vegetation
2. Aralia nudicaulis	50	62.5%	FACU	Dominance Test is > 50%
3. Dryopteris intermedia	10	12.5%	FACU	Prevalence Index is \leq 3.0 1
4.	0	0.0%	1400	Morphological Adaptations ¹ (Provide supporting
6		0.0%		data in Remarks or on a separate sheet)
5 <u>.</u> 6.	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
7.				¹ Indicators of hydric soil and wetland hydrology must
	0	0.0%		be present, unless disturbed or problematic.
8	0	0.0%		Definitions of Vegetation Strata:
9	0	0.0%		Demittons of Vegetation Strata.
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0	0.0%		at breast height (DBH), regardless of height.
12	0	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)	80	= Total Cove	r	greater than 3.28 ft (1m) tall
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0	0.0%		height.
	0	= Total Cove	r	
				Hydrophytic Vegetation
				Present? Yes No 💿
Remarks: (Include photo numbers here or on a separate she	et.)			
	,			

(inches) Color (moist) % Color (moist) % Type T Loc2 Texture Re 0.5 10YR 3/2 100%	
5.7 2.5Y 5/1 100% File Loamy Sand 7.13 10/R 4/3 100% Very Fine Loamy Sand 13+ Doull dery 14 Histosol (A1) Doull dery Histosol (A1) Doull dery Hydric Soil Indicators: Indicators for Problematic Hyd Dopletod Below Dark Surface (S9) (LRR R, MLRA 1498) Doark Surface (S1) (LRR K, L) Dopletod Below Dark Surface (A11) Depleted Matrix (F2) <th>marks</th>	marks
7.13 10YR 4/3 100% Very Fine Loamy Sand 13+ Doull dery 14 Doull dery 15 Doull dery 16 Doull dery 17 Doull dery 17 Doull dery 18 Doull dery 19 Doull dery 19 Doull dery 10 Doull dery	
13+ boull dery 15+ boull dery 15+ boull dery </td <td></td>	
13+	
Hydric Soil Indicators: Indicators for Problematic Hyd Histosol (A1) Polyvalue Below Surface (S8) (LRR R, MLRA 149B) Indicators for Problematic Hyd Histosol (A2) MLRA 149B) 2 cm Muck (A10) (LRR K, L, M Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) Coast Prairie Redox (A16) (LRF Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) LRR K, L) Dark Surface (S7) (LRR K, L) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Dark Surface (S7) (LRR K, L) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Polyvalue Below Surface (S9) (LR R Thick Dark Surface (A12) Redox Dark Surface (F6) Iron-Manganese Masses (F12) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Mesic Spodic (TA6) (MLRA 144B) Sandy Redox (S5) Stripped Matrix (S6) Very Shallow Dark Surface (TF Dark Surface (S7) (LRR R, MLRA 149B) Very Shallow Dark Surface (TE 3 ¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Yes Other (Explain in Remarks) 3 ¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Hydric Soil Present? Yes Other (Soil Present? Yes Other (S	
Hydric Soil Indicators: Indicators for Problematic Hyd Histosol (A1) Polyvalue Below Surface (S8) (LRR R, MLRA 149B) Indicators for Problematic Hyd Histosol (A2) MLRA 149B) 2 cm Muck (A10) (LRR K, L, M Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) Coast Prairie Redox (A16) (LRF Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) LRR K, L) Dark Surface (S7) (LRR K, L) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Dark Surface (S7) (LRR K, L) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Polyvalue Below Surface (S9) (LR R Thick Dark Surface (A12) Redox Dark Surface (F6) Iron-Manganese Masses (F12) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Mesic Spodic (TA6) (MLRA 144B) Sandy Redox (S5) Stripped Matrix (S6) Very Shallow Dark Surface (TF Dark Surface (S7) (LRR R, MLRA 149B) Very Shallow Dark Surface (TE 3 ¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Yes Other (Explain in Remarks) 3 ¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Hydric Soil Present? Yes Other (Soil Present? Yes Other (S	
Hydric Soil Indicators: Indicators for Problematic Hyd Histosol (A1) Polyvalue Below Surface (S8) (LRR R, MLRA 149B) Indicators for Problematic Hyd Histosol (A2) MLRA 149B) 2 cm Muck (A10) (LRR K, L, M Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) Coast Prairie Redox (A16) (LRF Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) LRR K, L) Dark Surface (S7) (LRR K, L) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Dark Surface (S7) (LRR K, L) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Polyvalue Below Surface (S9) (LR R Thick Dark Surface (A12) Redox Dark Surface (F6) Iron-Manganese Masses (F12) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Mesic Spodic (TA6) (MLRA 144B) Sandy Redox (S5) Stripped Matrix (S6) Very Shallow Dark Surface (TF Dark Surface (S7) (LRR R, MLRA 149B) Very Shallow Dark Surface (TE 3 ¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Yes Other (Explain in Remarks) 3 ¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Hydric Soil Present? Yes Other (Soil Present? Yes Other (S	
Hydric Soil Indicators: Indicators for Problematic Hyd Histosol (A1) Polyvalue Below Surface (S8) (LRR R, MLRA 149B) Indicators for Problematic Hyd Histic Epipedon (A2) MLRA 149B) 2 cm Muck (A10) (LRR K, L, M Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) Coast Prairie Redox (A16) (LRF Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) LRR K, L) Dark Surface (S7) (LRR K, L) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Dark Surface (S7) (LRR K, L) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Polyvalue Below Surface (S9) (LR K Thick Dark Surface (A12) Redox Dark Surface (F6) Thin Dark Surface (S9) (LR K Sandy Gleyed Matrix (S4) Redox Depressions (F8) Mesic Spodic (TA6) (MLRA 1449 Sandy Redox (S5) Stripped Matrix (S6) Very Shallow Dark Surface (TF Dark Surface (S7) (LR R, MLRA 149B) Very Shallow Dark Surface (TE 3 ¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Yes Other (Explain in Remarks) 3 ¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Hydric Soil Present? Yes Other (Soil Present? Yes Ot	
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Index Bark Surface (R12) □ Depleted Dark Surface (F7) □ Iron-Manganese Masses (F12) □ Sandy Muck Mineral (S1) □ Redox Depressions (F8) □ Piedmont Floodplain Soils (F19) □ Sandy Redox (S5) □ Redox Depressions (F8) □ Mesic Spodic (TA6) (MLRA 144 □ Sandy Redox (S5) □ Depleted Dark Surface (F7) □ Piedmont Floodplain Soils (F19) □ Sandy Redox (S5) □ Mesic Spodic (TA6) (MLRA 144 □ Red Parent Material (TF2) □ Very Shallow Dark Surface (TF □ Dark Surface (S7) (LRR R, MLRA 149B) □ Other (Explain in Remarks) ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type: bouldery □ Depth (inches): 13 □	
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Stripped Matrix (S6) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. 3 Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type: bouldery Depth (inches): 13	A, 145, 149B)
Dark Surface (S7) (LRR R, MLRA 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: bouldery Depth (inches): 13 Hydric Soil Present?	
³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type: bouldery Depth (inches): 13 Hydric Soil Present? Yes O	2)
Restrictive Layer (if observed): Type: bouldery Depth (inches): 13	
Type: bouldery Depth (inches): 13 Hydric Soil Present? Yes	
Depth (inches): 13 Hydric Soil Present? Yes O	
Deptil (inches).	No 🖲
Remarks:	



AN10 Upland



AN10 Wetland

		v
Project/Site: Antrim Wind Project	City/County: Antrim	Sampling Date: 12-Aug-11
Applicant/Owner: Eolian Renewable Energy, LLC	State: NH	Sampling Point: AN11 Wet
Investigator(s): AF JG	Section, Township, Range: S. 1	. R.
Landform (hillslope, terrace, etc.): Hillside	Local relief (concave, convex, none): none	Slop e: 7.0 % / 4.0
Subregion (LRR or MLRA): Lat.:	Long.:	Datum:
Soil Map Unit Name:	NWI clas	sification: PSS
Are Vegetation , Soil , or Hydrology naturally Summary of Findings - Attach site map showing	tly disturbed? Are "Normal Circumstances problematic? (If needed, explain any ans sampling point locations, transect	wers in Remarks.)
Hydrophytic Vegetation Present? Yes ● No ○ Hydric Soil Present? Yes ● No ○ Wetland Hydrology Present? Yes ● No ○	Is the Sampled Area within a Wetland? Yes • No	0
Remarks: (Explain alternative procedures here or in a separate report skiddered PSS below moose wallow	ort.)	

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)			
Primary Indicators (minimum of one required;	check all that apply)	Surface Soil Cracks (B6)			
Surface Water (A1)	Water-Stained Leaves (B9)	✓ Drainage Patterns (B10)			
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)			
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)			
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)			
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)			
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)			
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)			
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)			
Inundation Visible on Aerial Imagery (B7)	Microtopographic Relief (D4)				
Sparsely Vegetated Concave Surface (B8)	Other (Explain in Remarks)	FAC-neutral Test (D5)			
Field Observations:					
Surface Water Present? Yes O No O	Depth (inches):				
Water Table Present? Yes O No •	Depth (inches):	·· • • •			
Saturation Present? (includes capillary fringe) Yes • No	Wetland Hyd Depth (inches):0	drology Present? Yes $ullet$ No $igodoldsymbol{ imes}$			
Describe Recorded Data (stream gauge, monit	oring well, aerial photos, previous inspections), if ava	ailable:			
Remarks:					

VEGETATION - Use scientific names of pla	nts	Dominant Species?		Sampling Point: AN11 Wet			
Tree Stratum (Plot size: 30')	Absolute % Cover		Indicator Status	Dominance Test worksheet:			
 1		0.0%		Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)			
2.	0	0.0%					
3.	0	0.0%		Total Number of Dominant Species Across All Strata: 5 (B)			
4.	0	0.0%					
5	0	0.0%		Percent of dominant Species			
6		0.0%		That Are OBL, FACW, or FAC:100.0% (A/B)			
7		0.0%		Prevalence Index worksheet:			
Sapling/Shrub Stratum (Plot size: 15')		= Total Cove	r	Total % Cover of: Multiply by:			
1. Spiraea tomentosa	15	✓ 75.0%	FACW	OBL species <u>25</u> x 1 = <u>25</u>			
2. Betula alleghaniensis		25.0%	FAC	FACW species $63 \times 2 = 126$			
3		0.0%		FAC species5 x 3 =15			
1		0.0%		FACU species $0 \times 4 = 0$			
4 5		0.0%		UPL species x 5 =			
6.	0	0.0%		Column Totals: 93 (A) 166 (B)			
7.	0	0.0%		·			
/·				Prevalence Index = B/A = <u>1.785</u>			
Herb Stratum (Plot size: 5')	20	= Total Cove	r	Hydrophytic Vegetation Indicators:			
1. Onoclea sensibilis	20	27.4%	FACW	Rapid Test for Hydrophytic Vegetation			
		27.4%	FACW+	✓ Dominance Test is > 50%			
3 Carox arinita	25	34.2%	OBL	V Prevalence Index is \leq 3.0 ¹			
1 0		6.8%	FACW	Morphological Adaptations ¹ (Provide supporting			
5 Octomorphic consideration		4.1%	FACW+	data in Remarks or on a separate sheet)			
6		0.0%	TAOW	Problematic Hydrophytic Vegetation ¹ (Explain)			
7		0.0%		¹ Indicators of hydric soil and wetland hydrology must			
8.	0	0.0%		be present, unless disturbed or problematic.			
9.	0	0.0%		Definitions of Vegetation Strata:			
10		0.0%					
11	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.			
10		0.0%		at bloast holght (BBH), regardloss of holght.			
Voody Vine Stratum (Plot size:)		= Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall			
	0	0.00/					
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.			
2	0	0.0%					
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in			
4	· · · · · · · · · · · · · · · · · · ·			height.			
	0	= Total Cove	r				
				Hydrophytic			
				Vegetation V A N			
				Present? Yes Vo V			
Remarks: (Include photo numbers here or on a separate she	et.)						

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Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)											
Depth (inches)	-	Matrix				dox Featu					
	Color (r	•	%	Color (moist)	%	Type 1	Loc ²	Texture	Remarks	
0-6	10YR	3/2	100%						Loam		
6-7	2.5Y	4/1	100%						Fine Sandy Loam		
7-9	2.5Y	4/2	90%	10YR	4/6	10%	С		Fine Sandy Loam		
9+										rocky	
										-	
¹ Type: C=Cor		=Depletio	n RM=Red	uced Matrix	CS=Cover	ed or Coate	d Sand Gra	ins ² l oc	ation: PL=Pore Lining. M=N	 Matrix	
Hydric Soil		- 50.000						100	-	2	
Histosol				Polv	value Belo	w Surface (S8) (LRR R,			iciliatic rigune sons :	
	ipedon (A2)				A 149B)				_	(LRR K, L, MLRA 149B)	
Black His				🗌 Thin	Dark Surf	ace (S9) (L	.RR R, MLR	A 149B)		ox (A16) (LRR K, L, R)	
	n Sulfide (A4)			Loar	ny Mucky I	Mineral (F1)	LRR K, L)			or Peat (S3) (LRR K, L, R)	
	Layers (A5)					Matrix (F2)			Dark Surface (S7)		
Depleted	Below Dark S	iurface (A	.11)		eted Matri				Polyvalue Below Surface (S8) (LRR K, L) Thin Dark Surface (S9) (LRR K, L)		
Thick Da	rk Surface (A1	2)		_	ox Dark Su					Masses (F12) (LRR K, L, R)	
Sandy M	uck Mineral (S	1)				Surface (F7	')		 Piedmont Floodplain Soils (F12) (MLRA 149B) 		
Sandy GI	eyed Matrix (S	54)			ox Depress	sions (F8)			Mesic Spodic (TA6) (MLRA 144A, 145, 149B)		
Sandy Re									Red Parent Mater		
	Matrix (S6)								Very Shallow Dar	k Surface (TF12)	
Dark Sur	face (S7) (LRF	R, MLRA	A 149B)						Other (Explain in	Remarks)	
³ Indicators of	of hydrophytic	vegetatio	on and wetla	nd hydrology	must be p	present, unl	ess disturbe	ed or probl	ematic.		
Restrictive L	_ayer (if obse	erved):									
Type: ro											
Depth (inc									Hydric Soil Present?	Yes $ullet$ No $igcap$	
Remarks:											
Remarks.											

Project/Site: Antrim Wind Project		City/County: Antrim		Sampling Date: 1	2-Aug-11
Applicant/Owner: Eolian Renewable E	nergy, LLC		State: NH	Sampling Point:	AN11 Up
Investigator(s): AF JG		Section, Township, Rang	ge: S. T.	R.	
Landform (hillslope, terrace, etc.):	Hillside	Local relief (concave, conve	x, none): flat	Slope:	20.0 % / 11.3
Subregion (LRR or MLRA):	Lat.:	L	.ong.:	Da	tum:
Soil Map Unit Name:			NWI classi	fication:	-
Are climatic/hydrologic conditions of Are Vegetation , Soil Are Vegetation , Soil Summary of Findings - At	, or Hydrology Significant , or Hydrology naturally p	tly disturbed? Are "Norr problematic? (If neede	(If no, explain in mal Circumstances" ed, explain any answ ions, transects	present? Yes	
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes O No O Yes No O Yes No O	Is the Sampled Are within a Wetland?	a Yes 🔿 No 🤆	٥	
Remarks: (Explain alternative pro	cedures here or in a separate repo	ort.)			

aback all that apply)	Secondary Indicators (minimum of 2 required)							
	Surface Soil Cracks (B6)							
Water-Stained Leaves (B9)	Drainage Patterns (B10)							
Aquatic Fauna (B13)	Moss Trim Lines (B16)							
Marl Deposits (B15)	Dry Season Water Table (C2)							
Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)							
Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)							
Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)							
Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)							
Thin Muck Surface (C7)	Shallow Aquitard (D3)							
	FAC-neutral Test (D5)							
Depth (inches):								
Depth (inches):	vdroloav Present? Yes 🔿 No 🖲							
Wetland Hy Depth (inches):	ydrology Present? Yes 🔾 No 🖲							
(includes capillary fringe) Tes V NO V Depth (incluse) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:								
	Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Thin Muck Surface (C7) Other (Explain in Remarks) Depth (inches): Depth (inches): Depth (inches):							

Dominar Species?				Sampling Point: AN11 Up			
Tree Stratum (Plot size: 30')	Absolute	Rel.Strat.	Indicator	Dominance Test worksheet:			
	% Cover		Status	Number of Dominant Species			
1. Fagus grandifolia		22.2%	FACU	That are OBL, FACW, or FAC: 1 (A)			
2. Acer saccharum	60	66.7%	FACU-	Total Number of Dominant			
3. Quercus rubra	10	11.1%	FACU-	Species Across All Strata: 7 (B)			
4	0	0.0%		Dercent of dominant Species			
5	0	0.0%		Percent of dominant Species That Are OBL, FACW, or FAC: <u>14.3%</u> (A/B)			
6	0	0.0%					
7	0	0.0%		Prevalence Index worksheet:			
Sapling/Shrub Stratum (Plot size: 15')	90	= Total Cove	r	Total % Cover of: Multiply by:			
1. Quercus rubra	20	23.5%	FACU-	OBL species $0 \times 1 = 0$			
2. Picea rubens	20	23.5%	FACU	FACW species $0 \times 2 = 0$			
3. Betula alleghaniensis	15	17.6%	FAC	FAC species $18 \times 3 = 54$			
4. Acer saccharum	10	11.8%	FACU-	FACU speci es 160 x 4 = 640			
5. Ostrya virginiana	20	23.5%	FACU-	UPL species x 5 =50			
6.	0	0.0%		Column Totals: <u>188</u> (A) <u>744</u> (B)			
7.	0	0.0%		Prevalence Index = $B/A = 3.957$			
	85	= Total Cove	r				
Herb Stratum (Plot size: 5')				Hydrophytic Vegetation Indicators:			
1. Dennstaedtia punctilobula	10	✓ 76.9%	UPL	Dominance Test is $> 50\%$			
2.Trientalis borealis	3	23.1%	FAC	Prevalence Index is $\leq 3.0^{1}$			
3	0	0.0%		Prevalence index is 23.0 Morphological Adaptations ¹ (Provide supporting			
4	0	0.0%		data in Remarks or on a separate sheet)			
5	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)			
6	0	0.0%					
7	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			
8	0	0.0%					
9	0	0.0%		Definitions of Vegetation Strata:			
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter			
11	0	0.0%		at breast height (DBH), regardless of height.			
12	0	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and			
Woody Vine Stratum (Plot size:)	13	= Total Cove	r	greater than 3.28 ft (1m) tall.			
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of			
	0	0.0%		size, and woody plants less than 3.28 ft tall.			
3	0	0.0%					
4	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in height.			
7		= Total Cove	r	noight.			
			•				
				Hydrophytic			
				Vegetation Present? Yes O No •			
				ricom.			
Remarks: (Include photo numbers here or on a separate she	ot)			1			
Remarks: (Include proto numbers here of on a separate she	el.)						

Profile Desc Depth	ription: (De	scribe to Matrix	the depth		t the indic dox Featu		nfirm the	absence of indicators.)				
(inches)	Color (%	Color (moist)		Type 1	Loc ²	Texture	Remarks			
0-4	10YR	3/2	100%					Loam				
4-5	2.5Y	4/1	100%					Fine Sandy Loam				
5-9	10YR	4/3	100%					Very Fine Sandy Loam				
9-15	10YR	4/6	100%					Very Fine Sandy Loam				
Type: C=Cor	ncentration. D)=Depletio	n. RM=Redu	iced Matrix, CS=Cover	ed or Coat	ed Sand Gra	ins ² Loca	ation: PL=Pore Lining. M=Mat	rix			
Hydric Soil	Indicators:							Indicators for Problem	natic Hydric Soils : ³			
Histosol	. ,			Polyvalue Belov MLRA 149B)	w Surface	(S8) (LRR R		2 cm Muck (A10) (LRR K, L, MLRA 149B)				
_ ·	ipedon (A2)			Thin Dark Surf	ace (S9) (LRR R, MLR	A 149B)	Coast Prairie Redox	(A16) (LRR K, L, R)			
	ack Histic (A3) Initial back Surface (S4) /drogen Sulfide (A4) Loamy Mucky Mineral (F1) LRR K, L)					5 cm Mucky Peat or Peat (S3) (LRR K, L, R)						
	l Layers (A5)			Loamy Gleyed	Matrix (F2)		\Box Dark Surface (S7) (LRR K, L)				
	Depleted Below Dark Surface (A11)					Polyvalue Below Surface (S8) (LRR K, L) Thin Dark Surface (S9) (LRR K, L)						
Thick Dark Surface (A12)					Iron-Manganese Masses (F12) (LRR K, L, R)							
Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Sandy Clourd Matrix (S4) Redox Depressions (F8)						Piedmont Floodplain Soils (F19) (MLRA 149B)						
	leyed Matrix (54)						Mesic Spodic (TA6) (MLRA 144A, 145, 149B)				
Sandy Redox (S5) Stripped Matrix (S6)							Red Parent Material (TF2)					
Dark Surface (S7) (LRR R, MLRA 149B)						Very Shallow Dark Surface (TF12) Other (Explain in Remarks)						
³ Indicators of	of hydrophytic	: vegetatio	on and wetla	nd hydrology must be p	present, ur	اess disturb،	ed or probl					
Restrictive I												
Type: B	•								\sim			
Depth (ind	ches): <u>15+</u>							Hydric Soil Present?	Yes 🔾 No 🖲			
Remarks:												



AN11 Upland



AN11 Wetland

Project/Site: Antrim Wind Project	City/County:	Antrim			Sampling Date: 12-Aug-11		
Applicant/Owner: Eolian Renewable Energy, LLC		Stat	te: NH	Sam	npling Point:	an12 wetland	
Investigator(s): AF JG	Section, To	ownship, Range:	S.	т.	R.		
Landform (hillslope, terrace, etc.): Hillside	Local relief (co	oncave, convex, n	one): flat	-	Slope:	5.0 % / 2.9°	
Subregion (LRR or MLRA): Lat.:	Long.: Datum:					um:	
Soil Map Unit Name:	8		NWI cla	assificatio	n: PSS		
	ntly disturbed? problematic? sampling p	•	explain any a	nswers in	Remarks.)		
Hydrophytic Vegetation Present?YesNoHydric Soil Present?YesNoWetland Hydrology Present?YesNo		Sampled Area a Wetland?	Yes 🖲 N	0			
Remarks: (Explain alternative procedures here or in a separate report Skiddered PSS	ort.)						

Wetland Hydrology Indicators:	Secondary Indicators (minimum of 2 required)				
Primary Indicators (minimum of one required;	Surface Soil Cracks (B6)				
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)			
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)			
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)			
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)			
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)			
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)			
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)			
Iron Deposits (B5)					
Inundation Visible on Aerial Imagery (B7)					
Sparsely Vegetated Concave Surface (B8)		FAC-neutral Test (D5)			
Field Observations:					
Surface Water Present? Yes O No •	Depth (inches):				
Water Table Present? Yes O No •	Depth (inches):				
Saturation Present? (includes capillary fringe) Yes • No	Depth (inches): Wetland Hydrology Present? Yes I No				
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks:					

Dominant Species?				Sampling Point: an12 wetland
Tree Stratum (Plot size:)	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
<u> </u>	0	0.0%		Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)
2.	0	0.0%		
3.	0	0.0%		Total Number of Dominant Species Across All Strata: 5 (B)
4.	0	0.0%		Species Across All Strata: (B)
5.	0	0.0%		Percent of dominant Species
6		0.0%		That Are OBL, FACW, or FAC:100.0% (A/B)
7		0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')		= Total Cove	r	Total % Cover of: Multiply by:
1. Spiraea alba	25	33.3%	FACW+	OBL species $15 \times 1 = 15$
2. Spiraea tomentosa	50	66.7%	FACW	FACW species 125 x 2 = 250
3		0.0%		FAC species $0 \times 3 = 0$
4		0.0%		FACU species $0 \times 4 = 0$
5.		0.0%		UPL species x 5 =
6.	0	0.0%		Column Totals: 140 (A) 265 (B)
7	0	0.0%		Prevalence Index = B/A = 1.893
1	-	= Total Cove		
Herb Stratum (Plot size: 5')	75			Hydrophytic Vegetation Indicators:
1.Carex crinita	15	23.1%	OBL	Rapid Test for Hydrophytic Vegetation
2.Onoclea sensibilis	25	38.5%	FACW	✓ Dominance Test is > 50%
3.Scirpus cyperinus		7.7%	FACW+	✓ Prevalence Index is \leq 3.0 ¹
4. Rubus hispidus	20	30.8%	FACW	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5.	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6.	0	0.0%		
7.	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must
8.	0	0.0%		be present, unless disturbed or problematic.
9.	0	0.0%		Definitions of Vegetation Strata:
10.	0	0.0%		
11.	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
12.	0	0.0%		
Woody Vine Stratum (Plot size:)	65	= Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
 1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
0	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		Monthanian Allowed and an encoder the encoder (
Δ	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in height.
-T.,	-	= Total Cove		
			I	
				Hydrophytic Vegetation Present? Yes • No O
Remarks: (Include photo numbers here or on a separate she	et.)			

	Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Color (r	Matrix moist)	_ %	Color (dox Featu			Texture	Remarks
0-3	10YR	3/2	100%		moisty		Type .	LUC	Loam	Kennarks
3-12		4/2		10/0	A / /	5%	C			
	2.5Y		95%	10YR	4/6			PL	Fine Sandy Loam	
12-16	2.5Y	4/1	95%	10YR	4/6	5%	С	М	Fine Sandy Loam	
										_
						_			P	
										·
		=Depletic	on. RM=Red	uced Matrix,	CS=Cover	ed or Coate	ed Sand Gr	ains ² Loo	cation: PL=Pore Lining. M=N	
Hydric Soil								_	Indicators for Probl	ematic Hydric Soils : ³
Histosol					value Belo A 149B)	w Surface ((S8) (LRR F	₹,	2 cm Muck (A10)	(LRR K, L, MLRA 149B)
	ipedon (A2)				,	face (S9) (I	LRR R, MLF	RA 149B)	Coast Prairie Red	ox (A16) (LRR K, L, R)
Black His	n Sulfide (A4)					Mineral (F1				or Peat (S3) (LRR K, L, R)
	Layers (A5)			🗌 Loar	ny Gleyed	Matrix (F2)	 		Dark Surface (S7)	
	Below Dark S	Surface (A	.11)	🗌 Depl	eted Matr	ix (F3)				Surface (S8) (LRR K, L)
	rk Surface (A1			_		urface (F6)			Thin Dark Surface	e (S9) (LRR K, L) Masses (F12) (LRR K, L, R)
Sandy M	uck Mineral (S	51)				Surface (F	7)			ain Soils (F19) (MLRA 149B)
Sandy GI	eyed Matrix (S	S4)		Redo	ox Depres	sions (F8)			_	6) (MLRA 144A, 145, 149B)
Sandy Re	edox (S5)								Red Parent Mater	
Stripped	Matrix (S6)								Very Shallow Darl	
Dark Sur	face (S7) (LRF	r r, mlra	A 149B)						Other (Explain in	Remarks)
³ Indicators c	of hydrophytic	vegetatio	on and wetla	nd hydrology	must be	present, un	less distur	oed or prob	plematic.	
Restrictive L	ayer (if obs	erved):								
Туре:	•	-								
Depth (ind	ches):								Hydric Soil Present?	Yes $lacksquare$ No $igodom$
Remarks:										

Project/Site: Antrim Wind Project		City/County: Antrim		Sampling Date: 12-Aug-11					
Applicant/Owner: Eolian Renewable E	nergy, LLC	St	tate: NH	Sampling Point:	an12 upland				
Investigator(s): AF JG		Section, Township, Range	: S. T.	R.					
Landform (hillslope, terrace, etc.):	Hillside	Local relief (concave, convex,	none): flat	Slope:	5.0 %/ 2.9 [°]				
Subregion (LRR or MLRA):	Lat.:	Lo	ng.:	Datum:					
Soil Map Unit Name:			NWI classi	fication:					
Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.) Are Vegetation , Soil , or Hydrology return aturally problematic? (If needed, explain any answers in Remarks.) Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.									
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes No Yes No Yes No No	Is the Sampled Area within a Wetland?	Yes 🔿 No 🖲						
Remarks: (Explain alternative proc	edures here or in a separate repo	rt.)							

	Secondary Indicators (minimum of 2 required)					
Wetland Hydrology Indicators:						
Primary Indicators (minimum of one required; check all that apply)						
Water-Stained Leaves (B9)	Drainage Patterns (B10)					
Aquatic Fauna (B13)	Moss Trim Lines (B16)					
Marl Deposits (B15)	Dry Season Water Table (C2)					
Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)					
Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)					
Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)					
Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)					
Thin Muck Surface (C7)	Shallow Aquitard (D3)					
Other (Explain in Remarks)	Microtopographic Relief (D4)					
(FAC-neutral Test (D5)					
Depth (inches):						
Depth (inches):	vdrology Present? Yes \bigcirc No \odot					
Wetland Hy Depth (inches):	ydrology Present? Yes \bigcirc No \bigcirc					
pring well, aerial photos, previous inspections), if a	vailable:					
	Water-Stained Leaves (B9) Aquatic Fauna (B13) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Thin Muck Surface (C7) Other (Explain in Remarks) Depth (inches): Depth (inches): Depth (inches):					

	Sampling Point: an12 upland			
Tree Stratum (Plot size: 30')	Absolute % Cover		Indicator Status	Dominance Test worksheet:
1. Quercus rubra	15	60.0%	FACU-	Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)
2. Tsuga canadensis		40.0%	FACU	
3.		0.0%		Total Number of Dominant
4.	0	0.0%		Species Across All Strata:6 (B)
5.	0	0.0%		Percent of dominant Species
6.	0	0.0%		That Are OBL, FACW, or FAC:(A/B)
7		0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')		= Total Cove	r	Total % Cover of: Multiply by:
				OBL species 0 x 1 = 0
1. Acer pensylvanicum		✓ 44.4%	FACU	FACW species $0 \times 2 = 0$
2. Betula alleghaniensis		22.2%	FAC	FAC species $10 \times 3 = 30$
3. Acer saccharum		33.3%	FACU-	FACU species $\frac{88}{352}$ x 4 = $\frac{352}{352}$
4	0	0.0%		00 450
5	0	0.0%		
б	0	0.0%		Column Totals: <u>188</u> (A) <u>832</u> (B)
7	0	0.0%		Prevalence Index = B/A = 4.426
Herb Stratum (Plot size: 5')	45	= Total Cove	r	Hydrophytic Vegetation Indicators:
1. Dennstaedtia punctilobula	90	76.3%	UPL	Rapid Test for Hydrophytic Vegetation
2.Solidago canadensis	10	8.5%	FACU	Dominance Test is > 50%
3.Rubus alumnus	10	8.5%	FACU-	Prevalence Index is \leq 3.0 ¹
4. Dryopteris intermedia	5	4.2%	FACU	Morphological Adaptations ¹ (Provide supporting
5.Aralia nudicaulis	3	2.5%	FACU	data in Remarks or on a separate sheet)
6.	0	0.0%	1400	Problematic Hydrophytic Vegetation ¹ (Explain)
7		0.0%		¹ Indicators of hydric soil and wetland hydrology must
8	0	0.0%		be present, unless disturbed or problematic.
9.	0	0.0%		Definitions of Vegetation Strata:
10.	0	0.0%		
11.	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
12.	0	0.0%		a breast height (DDH), regardless of height.
12		= Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)				greater than 3.28 ft (1m) tall
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
2	0	0.0%		
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0	0.0%		height.
	0	= Total Cove	r	
				Hydrophytic Vegetation
				Present? Yes O No 🖲
Remarks: (Include photo numbers here or on a separate sh	eet.)			

Profile Desc Depth	•	cribe to Matrix	the depth	needed to document the indicator or confirm the Redox Features	he absence of indicators.)	
(inches)	Color (n	noist)	%	Color (moist) % Type 1 Loc	² Texture	Remarks
0-4	10YR	3/2	100%		Loam	
4-5	2.5Y	5/1	100%		Fine Sandy Loam	
5-12	10YR	4/3	100%		Fine Sandy Loam	
		1/0	10070			
						-
¹ Type: C=Co	ncentration. D=	=Depletio	n. RM=Red	uced Matrix, CS=Covered or Coated Sand Grains ² L	ocation: PL=Pore Lining. M=I	Matrix
Hydric Soil	Indicators:				Indicators for Prob	lematic Hydric Soils : ³
Histosol	(A1)			Polyvalue Below Surface (S8) (LRR R,		(LRR K, L, MLRA 149B)
🗌 Histic Ep	ipedon (A2)			MLRA 149B)	Casat Drairia Dad	lox (A16) (LRR K, L, R)
Black His	stic (A3)			☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)		or Peat (S3) (LRR K, L, R)
Hydroge	n Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)	Dark Surface (S7	
_	Layers (A5)			Loamy Gleyed Matrix (F2)		Surface (S8) (LRR K, L)
	Below Dark S		11)	Depleted Matrix (F3)		e (S9) (LRR K, L)
Thick Da	rk Surface (A1	2)		Redox Dark Surface (F6)		Masses (F12) (LRR K, L, R)
	uck Mineral (S			Depleted Dark Surface (F7)		lain Soils (F19) (MLRA 149B)
_	leyed Matrix (S	54)		Redox Depressions (F8)		6) (MLRA 144A, 145, 149B)
	edox (S5)				Red Parent Mater	rial (TF2)
	Matrix (S6)				Very Shallow Dar	k Surface (TF12)
Dark Sur	face (S7) (LRR	R, MLRA	(149B)		Other (Explain in	Remarks)
³ Indicators of	of hydrophytic	vegetatio	n and wetla	nd hydrology must be present, unless disturbed or pr	oblematic.	
Restrictive I	Layer (if obse	erved):				
Type:						
Depth (in	ches):				Hydric Soil Present?	Yes 🔾 No 🖲
Remarks:						
Remarks.						



AN12 Upland



AN12 Wetland

					•		
Project/Site: Antrim Wind Project	City/County:	Antrim		Sampling Date: 12-Aug-11			
Applicant/Owner: Eolian Renewable E		Stat	te: NH	Sampling Point:	an13 wetland		
Investigator(s): AF JG		Section, T	ownship, Range:	S. Т.	R.		
Landform (hillslope, terrace, etc.):	Footslope	Local relief (c	oncave, convex, n	one): flat	Slope:	3.0 % / 1.	
Subregion (LRR or MLRA):	Lat.:	_	Long	.:	Dat	Datum:	
Soil Map Unit Name:				NWI classi	ification: PSS		
Are Vegetation, Soil Summary of Findings - At		problematic? sampling p	•		vers in Remarks.) 5, important f e	eatures, etc.	
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes ● No ○ Yes ● No ○ Yes ● No ○		e Sampled Area n a Wetland?	Yes 🖲 No 🤇	C		
Remarks: (Explain alternative pro Isolated lay down yard wetland ac		ort.)					

Wetland Hydrology Indicators:	Secondary Indicators (minimum of 2 required)					
Primary Indicators (minimum of one required;	Surface Soil Cracks (B6)					
Surface Water (A1)	Water-Stained Leaves (B9)	✓ Drainage Patterns (B10)				
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)				
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)				
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)				
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)				
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)				
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)				
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)				
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)				
Sparsely Vegetated Concave Surface (B8)		✓ FAC-neutral Test (D5)				
Field Observations:						
Surface Water Present? Yes O No •	Depth (inches):					
Water Table Present? Yes O No •	Depth (inches):					
Saturation Present? (includes capillary fringe) Yes • No	Depth (inches): Wetland Hydrology Present? Yes O No O					
Describe Recorded Data (stream gauge, monit	oring well, aerial photos, previous inspections), if av	/ailable:				
Remarks:						

DominantSpecies?				Sampling Point: an13 wetland			
Tree Stratum (Plot size:)	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:			
	0	0.0%		Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)			
2.		0.0%					
		0.0%		Total Number of Dominant			
3	0			Species Across All Strata: <u>3</u> (B)			
4		0.0%		Percent of dominant Species			
5		0.0%		That Are OBL, FACW, or FAC:100.0% (A/B)			
6		0.0%					
7	0	0.0%		Prevalence Index worksheet:			
Sapling/Shrub Stratum (Plot size: 15')	0	= Total Cove	r	Total % Cover of: Multiply by: 0BL speci es 53 x 1 = 53			
1. Spiraea tomentosa	66	72.5%	FACW	FACW species $107 \times 2 = 214$			
2. Acer rubrum	10	11.0%	FAC				
3. Spiraea alba	15	16.5%	FACW+				
4.	0	0.0%		FACU species $0 \times 4 = 0$			
5.		0.0%		UPL species $0 \times 5 = 0$			
6.	0	0.0%		Column Totals: <u>170</u> (A) <u>297</u> (B)			
7.	0	0.0%		Prevalence Index = B/A =1.747			
Herb Stratum (Plot size: 5')	91	= Total Cove	r	Hydrophytic Vegetation Indicators:			
· · · · · _ · _				Rapid Test for Hydrophytic Vegetation			
1.Carex lurida		10.1%	OBL	✓ Dominance Test is > 50%			
2.Onoclea sensibilis		6.3%	FACW	✓ Prevalence Index is $\leq 3.0^{1}$			
3.Eupatorium perfoliatum	3	3.8%	FACW+	Morphological Adaptations ¹ (Provide supporting			
4. Rubus hispidus		19.0%	FACW	data in Remarks or on a separate sheet)			
5.Carex crinita	25	⊻ 31.6%	OBL	Problematic Hydrophytic Vegetation ¹ (Explain)			
6. Scirpus cyperinus	3	3.8%	FACW+	1			
7.Carex trisperma	20	25.3%	OBL	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			
8	0	0.0%					
9	0	0.0%		Definitions of Vegetation Strata:			
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter			
11	0	0.0%		at breast height (DBH), regardless of height.			
12	0	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and			
Woody Vine Stratum (Plot size:)	79	= Total Cove	r	greater than 3.28 ft (1m) tall.			
<u> </u>	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of			
2	0	0.0%		size, and woody plants less than 3.28 ft tall.			
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in			
4.	0	0.0%		height.			
	0	= Total Cove	r				
				Hydrophytic Vegetation Present? Yes • No O			
Remarks: (Include photo numbers here or on a separate sh	eet.)						

	ription: (De	scribe to	the depth	needed to	document	t the indic	ator or co	onfirm the	absence of indicators.)		
Depth (inches)	Calar (Matrix	- %	- Color (dox Featu %			Texture	Dom	narks
	Color (COIOF	(moist)	70	Туре	Loc ²		Ren	101 KS
	10YR	3/2	100%		·				Loam		
5-6	2.5Y	4/1	100%						Fine Sandy Loam		
6-16	2.5Y	4/2	90%	10YR	5/8	10%	С	M	Fine Sandy Loam		
					·						
					·						
¹ Type: C=Cor	ncentration. D	=Depletic	on. RM=Red	uced Matrix,	CS=Cover	ed or Coate	ed Sand Gra	ains ² Loca	ation: PL=Pore Lining. M=N	latrix	
Hydric Soil									Indicators for Probl	ematic Hydri	c Soils: ³
Histosol					value Belo A 149B)	w Surface	(S8) (LRR F	R,	2 cm Muck (A10)		
	ipedon (A2)					ace (S9) (I	lrr r, mlf	A 149B)	Coast Prairie Redo	ox (A16) (LRR I	K, L, R)
Black His) LRR K, L)		5 cm Mucky Peat	or Peat (S3) (L	RR K, L, R)
	n Sulfide (A4) I Layers (A5)					Matrix (F2)			Dark Surface (S7)		
	Below Dark S	Surface (A	.11)		leted Matri				Polyvalue Below S		
	rk Surface (A	Red	Redox Dark Surface (F6)				Thin Dark Surface (S9) (LRR K, L)				
	uck Mineral (S			Dep	leted Dark	Surface (F	7)		Iron-Manganese Masses (F12) (LRR K, L, R) Piedmont Floodplain Soils (F19) (MLRA 149B)		
	eyed Matrix (Red	ox Depress	sions (F8)			Mesic Spodic (TA6) (MLRA 144A, 145, 149B)		
Sandy Re	edox (S5)								Red Parent Material (TF2)		
Stripped	Matrix (S6)								Very Shallow Dark		2)
Dark Sur	face (S7) (LR	R R, MLRA	A 149B)						Other (Explain in	Remarks)	
³ Indicators of	of hydrophytic	vegetatio	on and wetla	nd hydrolog	y must be p	present, un	less disturb	bed or probl	lematic.		
Restrictive I	_ayer (if obs	erved):									
Type: b	oulders										\sim
Depth (ind	ches): 16								Hydric Soil Present?	Yes 🖲	No 🔿
Remarks:											

Project/Site: Antrim Wind Project		City/County: Antrim		Sampling Date: 12-Aug-11		
Applicant/Owner: Eolian Renewable E	Energy, LLC		State: NH	Sampling Point:	an13 upland	
Investigator(s): AF JG		Section, Township, Rang	e: S. T.	R.		
Landform (hillslope, terrace, etc.):	Footslope	Local relief (concave, convex	, none): flat	Slope:	4.0 % / 2.3°	
Subregion (LRR or MLRA):	Lat.:	Le	ong.:	Dat	um:	
Soil Map Unit Name:			NWI classi	fication:	-	
Are climatic/hydrologic conditions of Are Vegetation , Soil Are Vegetation , Soil Summary of Findings - At	, or Hydrology Significant	tly disturbed? Are "Norn problematic? (If neede	(If no, explain ir nal Circumstances" d, explain any answ ONS, transects	present? Yes		
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes ○ No ● Yes ○ No ● Yes ○ No ●	Is the Sampled Area within a Wetland?	Yes 🔿 No 🤇	D		
Remarks: (Explain alternative pro	ocedures here or in a separate repo	ort.)				

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)		
Primary Indicators (minimum of one required;	Surface Soil Cracks (B6)			
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)		
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)		
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)		
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)		
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)		
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)		
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)		
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)		
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)		
Sparsely Vegetated Concave Surface (B8)		FAC-neutral Test (D5)		
Field Observations:				
Surface Water Present? Yes O No 🖲	Depth (inches):			
Water Table Present? Yes O No 🖲	Depth (inches):	rology Present? Yes 🔿 No 🖲		
Saturation Present? Yes O No O	Depth (inches):	Irology Present? Yes 🔾 No 🖲		
Describe Recorded Data (stream gauge, monito	pring well, aerial photos, previous inspections), if ava	ilable:		
Remarks:				

	Dominant Species?			
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
1 Accession	10	66.7%	FACU-	Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)
	5	33.3%	FACU	
-		0.0%	1700	Total Number of Dominant
				Species Across All Strata: <u>6</u> (B)
4	0	0.0%		Percent of dominant Species
5		0.0%		That Are OBL, FACW, or FAC:(A/B)
6		0.0%		
7	0	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	15	= Total Cove	r	Total % Cover of: Multiply by: 0BL species 0 x 1 = 0
1. Acer pensylvanicum	33	32.0%	FACU	
2. Prunus serotina	10	9.7%	FACU	
3. Acer saccharum		✔ 48.5%	FACU-	FAC species $0 \times 3 = 0$
4. Populus tremula		9.7%	FACU	FACU species x 4 =772
5.		0.0%		UPL species $5 \times 5 = 25$
6	•	0.0%		Column Totals: 218 (A) 837 (B)
7	0			·
		0.0% = Total Cove		Prevalence Index = B/A = <u>3.839</u>
Herb Stratum (Plot size: 5')	103	- 10101 0010		Hydrophytic Vegetation Indicators:
1.Aralia nudicaulis	75	75.0%	FACU	Rapid Test for Hydrophytic Vegetation
2 Dukus kienidus		20.0%	FACW	Dominance Test is > 50%
2		5.0%	UPL	Prevalence Index is \leq 3.0 1
Λ		0.0%		Morphological Adaptations ¹ (Provide supporting
F				data in Remarks or on a separate sheet)
		0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6	0	0.0%		
7	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8	0	0.0%		
9	0	0.0%		Definitions of Vegetation Strata:
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0	0.0%		at breast height (DBH), regardless of height.
12	0	0.0%		Conting/shouth Weathy plants loss than 2 in DDU and
Woody Vine Stratum (Plot size:)	100	= Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
<u> </u>	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
0	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		
J	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in height.
4		-		
	0	= Total Cove	r	
				Hydrophytic
				Vegetation Present? Yes No •
				Present? Yes V NO
				1
Remarks: (Include photo numbers here or on a separate she	et.)			

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)							
Depth (inches)	Color (r	Matrix	_ %	Redox Features Color (moist) % Type 1 Loc ²	Texture	Remarks	
0-6	10YR	3/2	100%		Loam	Kennarks	
6-7							
	2.5Y	5/1	100%		Fine Loamy Sand		
7-17	10YR	4/3	100%		Fine Sandy Loam		
				· · · ·	<u></u>		
¹ Type: C=Cor	ncentration. D	=Depletic	on. RM=Red	uced Matrix, CS=Covered or Coated Sand Grains ² Loc.	ation: PL=Pore Lining. M=N	latrix	
Hydric Soil					Indicators for Probl	ematic Hydric Soils : ³	
Histosol				Polyvalue Below Surface (S8) (LRR R, MLRA 149B)		(LRR K, L, MLRA 149B)	
	ipedon (A2)			Thin Dark Surface (S9) (LRR R, MLRA 149B)	Coast Prairie Rede	ox (A16) (LRR K, L, R)	
Black His				Loamy Mucky Mineral (F1) LRR K, L)	5 cm Mucky Peat	or Peat (S3) (LRR K, L, R)	
	n Sulfide (A4) Layers (A5)			Loamy Gleyed Matrix (F2)	Dark Surface (S7)	(LRR K, L)	
	Below Dark S	Surfaco (A	11)	Depleted Matrix (F3)		urface (S8) (LRR K, L)	
	rk Surface (A1			Redox Dark Surface (F6)	Thin Dark Surface		
	uck Mineral (S			Depleted Dark Surface (F7)		Masses (F12) (LRR K, L, R)	
	eyed Matrix (S			Redox Depressions (F8)		ain Soils (F19) (MLRA 149B)	
Sandy Re					Red Parent Mater	5) (MLRA 144A, 145, 149B) al (TE2)	
	Matrix (S6)				Very Shallow Dark		
Dark Sur	face (S7) (LRF	r R, MLRA	A 149B)		Other (Explain in		
³ Indicators of	of hydrophytic	vegetatio	n and wetla	and hydrology must be present, unless disturbed or prob			
Restrictive I							
Type:		erveu).					
Depth (ind	ches).				Hydric Soil Present?	Yes 🔾 No 🖲	
Remarks:							
Reindiks.							



AN13 Upland



AN13 Wetland

Project/Site: Antrim Wind Project		City/County:	Antrim				Sampling Date: 1	6-Aug-11		
Applicant/Owner: Eolian Renewable Energy, LLC				State:	NH		Sampling Point:	an14 wet	land	
Investigator(s): AF JG		Section, T	ownship, Rar	nge: S.		т.	R.			
Landform (hillslope, terrace, etc.): Hillside		Local relief (c	oncave, conv	ex, non	e): flat		Slope:	10.0 % /	5.7°	
Subregion (LRR or MLRA):	Lat .:			Long.:			Dat	um:		
Soil Map Unit Name:					NWI	classif	ification: PSS			
	gnificant aturally p	ly disturbed?	(If need	rmal Cii led, exp	rcumstar olain any	nces" p answe	ers in Remarks.)		etc.	
Hydrophytic Vegetation Present?YesNoHydric Soil Present?YesNoWetland Hydrology Present?YesNo			e Sampled Are n a Wetland?		Yes 🖲	№ С)			
Remarks: (Explain alternative procedures here or in a separ Isolated PSS within skidder trail	rate repo	rt.)								

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)
Primary Indicators (minimum of one required;	Surface Soil Cracks (B6)	
Surface Water (A1)		
High Water Table (A2)	Aquatic Fauna (B13)	Drainage Patterns (B10) Moss Trim Lines (B16)
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2)	 Available of the output of the	Saturation Visible on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)		Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	Uther (Explain in Remarks)	✓ FAC-neutral Test (D5)
()		
Field Observations:		
Surface Water Present? Yes O No O	Depth (inches):	
Water Table Present? Yes O No 🔍	Depth (inches):	
Saturation Present? (includes capillary fringe) Yes	Depth (inches): 0	Irology Present? Yes 🔍 No 🔾
Describe Recorded Data (stream gauge, monitor	pring well, aerial photos, previous inspections), if ava	ilable:
Remarks:		
sphagnum 25% cover		
L		

Dominant Species?				Sampling Point: an14 wetland				
Tree Stratum (Plot size:)	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:				
	0	0.0%		Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)				
1 2.	0	0.0%		That are OBL, FACW, or FAC: (A)				
				Total Number of Dominant				
3	0	0.0%		Species Across All Strata: 4 (B)				
4		0.0%		Demonst of deminant Crossies				
5		0.0%		Percent of dominant Species That Are OBL, FACW, or FAC:100.0% (A/B)				
6	0	0.0%						
7	0	0.0%		Prevalence Index worksheet:				
Sapling/Shrub Stratum (Plot size: 15')	0	= Total Cove	r	Total % Cover of: Multiply by: OBL species 15 x 1 = 15				
1. Spiraea tomentosa	20	57.1%	FACW					
2. Acer rubrum	10	28.6%	FAC					
3. Fraxinus pennsylvanica	5	14.3%	FACW					
4.	-	0.0%		FACU species $0 \times 4 = 0$				
5.		0.0%		UPL species $\underbrace{0}{}$ x 5 = $\underbrace{0}{}$				
6.	0	0.0%		Column Totals: 121 (A) 245 (B)				
7.	0	0.0%		Prevalence Index = B/A = 2.025				
-	35	= Total Cove	r					
Herb Stratum (Plot size: 5')				Hydrophytic Vegetation Indicators:				
1. Onoclea sensibilis	40	46.5%	FACW	Rapid Test for Hydrophytic Vegetation				
2.Osmunda cinnamomea	10	11.6%	FACW	✓ Dominance Test is > 50%				
3. Eupatoriadelphus maculatus	8	9.3%	FACW	✓ Prevalence Index is \leq 3.0 ¹				
4. Scirpus cyperinus	_	5.8%	FACW+	Morphological Adaptations ¹ (Provide supporting				
5.Carex lurida	15	17.4%	OBL	data in Remarks or on a separate sheet)				
6.Rubus idaeus	8	9.3%	FAC-	Problematic Hydrophytic Vegetation ¹ (Explain)				
7.	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must				
8.				be present, unless disturbed or problematic.				
8 9.	0			Definitions of Vegetation Strata:				
10.	0	0.0%						
	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter				
11	0	0.0%		at breast height (DBH), regardless of height.				
12	0	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and				
_Woody Vine Stratum _ (Plot size:)	86	= Total Cove	r	greater than 3.28 ft (1m) tall				
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of				
2	0	0.0%		size, and woody plants less than 3.28 ft tall.				
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in				
4	0	0.0%		height.				
	0	= Total Cove	r					
				Hydrophytic				
				Vegetation				
				Present? Yes • No				
Remarks: (Include photo numbers here or on a separate she	et.)							

Depth		Matrix	the depth	needed to document the indicator or confirm the Redox Features	absence of indicators.)	
(inches)	Color (n	noist)	%	Color (moist) % Type 1 Loc ²	Texture	Remarks
0-8	10YR	3/2	100%		Sandy Loam	
8-11	2.5Y	5/1	100%		Sandy Loam	
					-	
	ncentration D-	-Donlatio	n PM-Pod	uced Matrix, CS=Covered or Coated Sand Grains ² Loc	ation: DI – Pore Lining M–Ma	triv
	Indicators:	- Depieti0	Kwi-Keu			
Histosol				Polyvalue Below Surface (S8) (LRR R,		matic Hydric Soils : ³
_	vipedon (A2)			MLRA 149B)		RR K, L, MLRA 149B)
Black His				Thin Dark Surface (S9) (LRR R, MLRA 149B)	_	(A16) (LRR K, L, R)
	n Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)		Peat (S3) (LRR K, L, R)
	l Layers (A5)			Loamy Gleyed Matrix (F2)	Dark Surface (S7) (
✓ Depleted	Below Dark S	urface (A	11)	Depleted Matrix (F3)	Thin Dark Surface (rface (S8) (LRR K, L)
Thick Da	irk Surface (A1	2)		Redox Dark Surface (F6)	_	usses (F12) (LRR K, L, R)
Sandy M	uck Mineral (S	1)		Depleted Dark Surface (F7)		n Soils (F19) (MLRA 149B)
Sandy G	leyed Matrix (S	(4)		Redox Depressions (F8)		(MLRA 144A, 145, 149B)
	edox (S5)				Red Parent Material	
	Matrix (S6)				Very Shallow Dark S	Surface (TF12)
Dark Sur	face (S7) (LRR	R, MLRA	149B)		Other (Explain in Re	emarks)
³ Indicators	of hydrophytic	vegetatio	n and wetla	nd hydrology must be present, unless disturbed or prob	ematic.	
Restrictive	Layer (if obse	erved):				
Type: b						
Depth (in	ches): 11				Hydric Soil Present?	Yes $ullet$ No $igodot$
Remarks:						
Komuno.						

Project/Site: Antrim Wind Project		City/County: Antrim		Sampling Date: 1	6-Aug-11		
Applicant/Owner: Eolian Renewable E	nergy, LLC	S	itate: NH	Sampling Point:	AN14 Upland		
Investigator(s): AF JG		Section, Township, Range	e: S. T.	R.			
Landform (hillslope, terrace, etc.):	Hillside	Local relief (concave, convex	, none) : flat	Slope:	10.0 % / 5.7°		
Subregion (LRR or MLRA):	Lat.:	Lo	ong.:	Dat	um:		
Soil Map Unit Name:			NWI classif	fication:	-		
Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.) Are Vegetation , soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No Are Vegetation , soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.							
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes O No O Yes No O Yes No O	Is the Sampled Area within a Wetland?	Yes 🔿 No 🖲)			
Remarks: (Explain alternative pro logged upland	cedures here or in a separate repo	rt.)					

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VEGETATION - Use scientific names of pra	Sampling Point: AN14 Upland							
Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:				
1. Picea rubens	20	50.0%	FACU	Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)				
2. Populus tremula		✓ 50.0%	FACU					
3.		0.0%		Total Number of Dominant Species Across All Strata: 4 (B)				
4.	0	0.0%		Species Across All Strata: (B)				
5.	0	0.0%		Percent of dominant Species				
6.	0	0.0%		That Are OBL, FACW, or FAC:(A/B)				
7	0	0.0%		Prevalence Index worksheet:				
Sapling/Shrub Stratum (Plot size: 15')		= Total Cove	r	Total % Cover of: Multiply by:				
				OBL species 0 x 1 = 0				
1. Acer pensylvanicum		83.3%	FACU	FACW species $0 \times 2 = 0$				
2. Acer saccharum		16.7%	FACU-	FAC species $30 \times 3 = 90$				
3	0	0.0%		FACU speci es 93 x 4 = 372				
4	0	0.0%		UPL species $0 \times 5 = 0$				
5	0	0.0%						
0	0	0.0%		Column Totals: 123 (A) 462 (B)				
7				Prevalence Index = B/A =3.756				
Herb Stratum (Plot size: 5')	48	= Total Cove	r	Hydrophytic Vegetation Indicators:				
1. Thelypteris noveboracensis	25	✓ 71.4%	FAC	Rapid Test for Hydrophytic Vegetation				
2.Aralia nudicaulis	5	14.3%	FACU	Dominance Test is > 50%				
3. Trientalls borealls	<u>5</u>	14.3%	FAC	□ Prevalence Index is \leq 3.0 ¹				
4.	_ <u>_</u> 0	0.0%		Morphological Adaptations ¹ (Provide supporting				
5.	0	0.0%		data in Remarks or on a separate sheet)				
6.	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)				
7.				¹ Indicators of hydric soil and wetland hydrology must				
8.				be present, unless disturbed or problematic.				
8 9.	0			Definitions of Vegetation Strata:				
9 10.	0							
10 11.	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter				
12.		0.0%		at breast height (DBH), regardless of height.				
12	0	0.0% = Total Cove		Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall				
Woody Vine Stratum (Plot size:)		_						
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.				
2								
3				Woody vine - All woody vines greater than 3.28 ft in				
4	0	0.0%		height.				
	0	= Total Cove	r					
				Hydrophytic				
				Vegetation Present? Yes O No •				
Remarks: (Include photo numbers here or on a separate sh	neet)							
Remarks. (menude proto numbers nere or on a separate sr								

Depth	•	atrix	h needed to document the indicator or confirm the Redox Features	absence of indicators.)	
(inches)	Color (moi	st) %	Color (moist) % Type 1 Loc ²	Texture	Remarks
0-5	10YR	3/2 100%		Sandy Loam	
5-10	2.5Y	5/3 100%		Loamy Sand	
¹ Type: C=Cor	ncentration D=D	enletion RM=Re	duced Matrix, CS=Covered or Coated Sand Grains ² Loca	ation: PI =Pore Lining M=1	 Matrix
Hydric Soil					2
Histosol			Polyvalue Below Surface (S8) (LRR R,		ienatic rigune sons .
	ipedon (A2)		MLRA 149B)		(LRR K, L, MLRA 149B)
Black His			Thin Dark Surface (S9) (LRR R, MLRA 149B)		ox (A16) (LRR K, L, R)
	n Sulfide (A4)		Loamy Mucky Mineral (F1) LRR K, L)	Dark Surface (S7	or Peat (S3) (LRR K, L, R)
Stratified	l Layers (A5)		Loamy Gleyed Matrix (F2)		Surface (S8) (LRR K, L)
Depleted	Below Dark Surf	ace (A11)	Depleted Matrix (F3)		e (S9) (LRR K, L)
Thick Da	rk Surface (A12)		Redox Dark Surface (F6)		Masses (F12) (LRR K, L, R)
Sandy M	uck Mineral (S1)		Depleted Dark Surface (F7)		ain Soils (F19) (MLRA 149B)
	leyed Matrix (S4)		Redox Depressions (F8)		6) (MLRA 144A, 145, 149B)
	edox (S5)			Red Parent Mater	ial (TF2)
	Matrix (S6)			Very Shallow Dar	k Surface (TF12)
Dark Sur	face (S7) (LRR R,	MLRA 149B)		Other (Explain in	Remarks)
³ Indicators of	of hydrophytic veg	getation and wet	land hydrology must be present, unless disturbed or probl	ematic.	
Restrictive I	Layer (if observ	ed):			
Туре:					
Depth (in	ches):			Hydric Soil Present?	Yes 🔾 No 🖲
Remarks:					



AN14 Wetland



AN14 Upland

Project/Site: Antrim Wind Project	City/County:	Antrim		Sampling Date: 16-Aug-11		
Applicant/Owner: Eolian Renewable Energy, LLC		State:	NH	Sampling Point:	an15 wetland	
Investigator(s): AF JG	Section, T	ownship, Range: S.	Т.	R.		
Landform (hillslope, terrace, etc.): Hillside	Local relief (c	oncave, convex, nor	e): concave	Slope:	8.0 % / 4.6°	
Subregion (LRR or MLRA): Lat.:		Long.:		Dat	um:	
Soil Map Unit Name:	<u>1</u>		NWI classif	ication: PSS		
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.						
Hydrophytic Vegetation Present? Yes ● No ○ Hydric Soil Present? Yes ● No ○ Wetland Hydrology Present? Yes ● No ○		e Sampled Area n a Wetland?	Yes 🔍 No 🔇)		
Remarks: (Explain alternative procedures here or in a separate report of the separate repor	ort.)					

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)		
Primary Indicators (minimum of one required;	Surface Soil Cracks (B6)			
Surface Water (A1)		Drainage Patterns (B10)		
✓ High Water Table (A2)	Water-Stained Leaves (B9)			
	Aquatic Fauna (B13)	Moss Trim Lines (B16)		
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)		
	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)		
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)		
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)		
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)		
L Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)		
☐ Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)		
Sparsely Vegetated Concave Surface (B8)		✓ FAC-neutral Test (D5)		
Field Observations:				
Surface Water Present? Yes O No 🔍	Depth (inches):			
Water Table Present? Yes No	Depth (inches): <u>5</u>	Iroloav Present? Yes 🖲 No 🔿		
Saturation Present? (includes capillary fringe) Yes No	Wetland Hyd Depth (inches): 0	irology Present? Yes 🔍 No 🔾		
Describe Recorded Data (stream gauge, monito	ring well, aerial photos, previous inspections), if ava	ilable:		
Remarks:				

	113	Dominant Species?		Sampling Point: an15 wetland
Tree Stratum (Plot size:)	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
 1	0	0.0%		Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)
0	0	0.0%		
	0	0.0%		Total Number of Dominant
3	0	0.0%		Species Across All Strata: <u>3</u> (B)
4				Percent of dominant Species
5				That Are OBL, FACW, or FAC:100.0% (A/B)
6		0.0%		
7	0	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	0	= Total Cove	r	Total % Cover of: Multiply by: 0BL species 28 x 1 = 28
1. Spiraea tomentosa	66	81.5%	FACW	
2. Acer rubrum	10	12.3%	FAC	FACW species $104 \times 2 = 208$
3. Fraxinus pennsylvanica	5	6.2%	FACW	FAC species $10 \times 3 = 30$
4.		0.0%		FACU species $0 \times 4 = 0$
5.		0.0%		UPL species x 5 =
6.	0	0.0%	-	Column Totals: 142 (A) 266 (B)
7.	0	0.0%		Prevalence Index = $B/A = 1.873$
	81	= Total Cove	-	
Herb Stratum (Plot size: 5')				Hydrophytic Vegetation Indicators:
1.Carex Iurida	20	32.8%	OBL	Rapid Test for Hydrophytic Vegetation
2.Eupatoriadelphus dubius	5	8.2%	FACW	✓ Dominance Test is > 50%
3. Scirpus cyperinus	3	4.9%	FACW+	✓ Prevalence Index is $\leq 3.0^{1}$
4. Onoclea sensibilis	25	4 1.0%	FACW	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5.Carex crinita	8	13.1%	OBL	Problematic Hydrophytic Vegetation ¹ (Explain)
6.	0	0.0%		
7.	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must
8.	0	0.0%		be present, unless disturbed or problematic.
9.	0	0.0%		Definitions of Vegetation Strata:
10.	0	0.0%		
11	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
12.	0	0.0%		a breast height (DDH), regardless of height.
		= Total Cove		Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
Woody Vine Stratum (Plot size:)				
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
2				
3				Woody vine - All woody vines greater than 3.28 ft in
4	0	0.0%		height.
	0	= Total Cove	r	
				Hydrophytic
				Vegetation Present? Yes I No
				Present? Yes VO
Remarks: (Include photo numbers here or on a separate she	et.)			

	ription: (Des		the depth	needed to				onfirm the	absence of indicators.)		
Depth (inches)	- Color (I	Matrix moist)	- %	Color (Re (moist)	dox Featu			Texture	Remarks	
0-8	10YR	3/2	100%						Loam		
8-12	2.5Y	4/1	90%	10YR	4/6	10%	С	M	Sandy Loam	·	
	2.01		,0,0			1070					
										·	
1	D	Dealatia	- DM D								
51		=Depletio	n. RIVI=Rec	iuced Matrix,	CS=Cover	ed of Coate	a Sana Gra	ains ² Loca	ation: PL=Pore Lining. M=N		
Hydric Soil				Del	valuo Polo	w Surface (ר הם ו <i>)</i> (20)		ematic Hydric Soils : ³	
	ipedon (A2)				A 149B)	w Surface (30) (LKK K	,		(LRR K, L, MLRA 149B)	
Black His				🗌 Thir	Dark Surf	ace (S9) (L	.RR R, MLR	RA 149B)		ox (A16) (LRR K, L, R)	
	n Sulfide (A4)			Loa	my Mucky	Mineral (F1)) LRR K, L)			or Peat (S3) (LRR K, L, R)	
Stratified	Layers (A5)					Matrix (F2)			Dark Surface (S7) (LRR K, L) Polyvalue Below Surface (S8) (LRR K, L)		
Depleted	Below Dark S	Surface (A	11)		leted Matri				Thin Dark Surface		
Thick Da	rk Surface (A1	12)		_	ox Dark Su				☐ Iron-Manganese Masses (F12) (LRR K, L,		
	uck Mineral (S					Surface (F7	()		Piedmont Floodplain Soils (F19) (MLRA 149B)		
	eyed Matrix (S4)			ox Depress	510115 (F8)			Mesic Spodic (TA	6) (MLRA 144A, 145, 149B)	
Sandy Re									Red Parent Mater	ial (TF2)	
	Matrix (S6) face (S7) (LRI		1400)						Very Shallow Dar		
									Other (Explain in	Remarks)	
°Indicators c	of hydrophytic	vegetatio	n and wetla	and hydrolog	/ must be	present, un	ess disturb	ed or probl	lematic.		
Restrictive L	-	erved):									
Type: R									Hydric Soil Present?	Yes 💿 No 🔾	
Depth (ind	ches): 12								Hyunc son Fresent:	res 🙁 No 🗢	
Remarks:											

Project/Site: Antrim Wind Project		City/County: Antrim		Sampling Date: 16-Aug-11			
Applicant/Owner: Eolian Renewable E	Energy, LLC		State: NH	Sampling Point:	an15 upland		
Investigator(s): AF JG		Section, Township, Ran	ge: S. T.	R.			
Landform (hillslope, terrace, etc.):	Hillside	Local relief (concave, conve	ex, none): flat	Slope:	8.0 % / 4.6°		
Subregion (LRR or MLRA):	Lat.:	I	Long.:	Dat	um:		
Soil Map Unit Name:			NWI classi	fication:			
Are climatic/hydrologic conditions of Are Vegetation, Soil Are Vegetation, Soil Summary of Findings - At	, or Hydrology Significant	tly disturbed? Are "Nor problematic? (If need	(If no, explain in rmal Circumstances" ed, explain any answ ions, transects	present? Yes			
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes ○ No ● Yes ○ No ● Yes ○ No ●	Is the Sampled Are within a Wetland?	$^{\rm sa}$ Yes \bigcirc No \bigcirc				
Remarks: (Explain alternative pro	ocedures here or in a separate repo	rt.)					

check all that apply)	Secondary Indicators (minimum of 2 required)		
Primary Indicators (minimum of one required; check all that apply) Surface Water (A1) Water-Stained Leaves (B9)			
	Drainage Patterns (B10)		
	Moss Trim Lines (B16)		
Marl Deposits (B15)	Dry Season Water Table (C2)		
Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)		
Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)		
Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)		
Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)		
Thin Muck Surface (C7)	Shallow Aquitard (D3)		
Other (Explain in Remarks)	Microtopographic Relief (D4)		
• (,	FAC-neutral Test (D5)		
Depth (inches):			
Depth (inches):	rdrology Present? Yes 🔿 No 🖲		
Wetland Hy Depth (inches):	rdrology Present? YES 🔾 NO 🔍		
pring well, aerial photos, previous inspections), if av	ailable:		
	Water-Stained Leaves (B9) Aquatic Fauna (B13) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Thin Muck Surface (C7) Other (Explain in Remarks) Depth (inches): Depth (inches): Depth (inches):		

	11.5	Dominant Species?		Sampling Point: an15 upland
Tree Stratum (Plot size: 30')	Absolute	Rel.Strat.	Indicator	Dominance Test worksheet:
	% Cover		Status	Number of Dominant Species
1. Fagus grandifolia	25	41.7%	FACU	That are OBL, FACW, or FAC: 1 (A)
2. Fraxinus americana	25	✓ 41.7%	FACU	Total Number of Dominant
3. Betula alleghaniensis	10	16.7%	FAC	Species Across All Strata: (B)
4	0	0.0%		Dereent of dominant Species
5	0	0.0%		Percent of dominant Species That Are OBL, FACW, or FAC:25.0% (A/B)
6	0	0.0%		
7	0	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	60	= Total Cove	r	Total % Cover of: Multiply by:
1. Acer pensylvanicum	50	83.3%	FACU	$\begin{array}{c} \text{OBL species} \qquad 0 \qquad \text{x 1} = 0 \\ \hline \end{array}$
2. Fagus grandifolia	5	8.3%	FACU	FACW species $0 \times 2 = 0$
3. Picea rubens		8.3%	FACU	FAC species $15 \times 3 = 45$
4.		0.0%		FACU species <u>112</u> x 4 = <u>448</u>
5	0	0.0%		UPL species $1 \times 5 = 5$
6.	0	0.0%		Column Totals: <u>128</u> (A) <u>498</u> (B)
7.	0	0.0%		Prevalence Index = $B/A = 3.891$
	60	= Total Cove	r	
Herb Stratum (Plot size: 5')			•	Hydrophytic Vegetation Indicators:
1.Fraxinus americana	1	12.5%	FACU	Rapid Test for Hydrophytic Vegetation
2. Acer saccharum	1	12.5%	FACU-	Dominance Test is > 50%
3. Malanthemum canadense	5	62.5%	FAC-	Prevalence Index is ≤3.0 ¹
4.Polygonatum pubescens	1	12.5%	UPL	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5.	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6.	0	0.0%		
7	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must
8	0	0.0%		be present, unless disturbed or problematic.
9.	0	0.0%		Definitions of Vegetation Strata:
10.	0	0.0%		
11.	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
12.	0	0.0%		······································
		= Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
Woody Vine Stratum (Plot size:)		_		
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0	0.0%		height.
	0	= Total Cove	r	
				Hydrophytic Vegetation
				Present? Yes O No •
Remarks: (Include photo numbers here or on a separate she	et.)			

(inches)	-	rix	needed to document the indicator or confirm the Redox Features		
0.0	Color (moist		Color (moist) % Type 1 Loc ²		Remarks
0-8	10YR 3/		·	Loam	
8-16	10YR 4/	/3 100%		Fine Sandy Loam	
			·	-	
			·		
Type: C=Cor	centration. D=Dep	letion. RM=Rec	luced Matrix, CS=Covered or Coated Sand Grains ² Loc	ation: PL=Pore Lining. M=N	Natrix
Hydric Soil	-				
Histosol (Polyvalue Below Surface (S8) (LRR R,		ematic Hydric Soils : ³
	ipedon (A2)		MLRA 149B)		(LRR K, L, MLRA 149B)
Black His			Thin Dark Surface (S9) (LRR R, MLRA 149B)		Dx (A16) (LRR K, L, R)
_	n Sulfide (A4)		Loamy Mucky Mineral (F1) LRR K, L)		or Peat (S3) (LRR K, L, R)
	Layers (A5)		Loamy Gleyed Matrix (F2)	Dark Surface (S7)	Gurface (S8) (LRR K, L)
Depleted	Below Dark Surfac	e (A11)	Depleted Matrix (F3)	Thin Dark Surface	
Thick Dar	rk Surface (A12)		Redox Dark Surface (F6)		Masses (F12) (LRR K, L, R)
Sandy Mu	uck Mineral (S1)		Depleted Dark Surface (F7)	_	ain Soils (F19) (MLRA 149B)
🗌 Sandy Gl	eyed Matrix (S4)		Redox Depressions (F8)		5) (MLRA 144A, 145, 149B)
Sandy Re	edox (S5)			Red Parent Mater	
Stripped	Matrix (S6)			Very Shallow Dark	
Dark Surf	face (S7) (LRR R, N	ILRA 149B)		Other (Explain in	
		tation and wetla	and hydrology must be present, unless disturbed or prob	lematic.	
³ Indicators o	of hydrophytic vege				
Restrictive L	ayer (if observed				
Restrictive L Type: _R	.ayer (if observed efusal			Hydric Soil Present?	Yes 🔾 No 🖲
Restrictive L Type: <u>R</u> Depth (inc	.ayer (if observed efusal			Hydric Soil Present?	Yes 🔿 No 🖲
Restrictive L Type: <u>R</u>	.ayer (if observed efusal			Hydric Soil Present?	Yes 🔿 No 🖲
Restrictive L Type: <u>R</u> Depth (inc	.ayer (if observed efusal			Hydric Soil Present?	Yes 🔾 No 🖲
Restrictive L Type: <u>R</u> Depth (inc	.ayer (if observed efusal			Hydric Soil Present?	Yes 🔾 No 🖲
Restrictive L Type: <u>R</u> Depth (inc	.ayer (if observed efusal			Hydric Soil Present?	Yes 🔿 No 🖲
Restrictive L Type: <u>R</u> Depth (inc	.ayer (if observed efusal			Hydric Soil Present?	Yes 🔿 No 💿
Restrictive L Type: <u>R</u> Depth (inc	.ayer (if observed efusal			Hydric Soil Present?	Yes 🔿 No 🖲
Restrictive L Type: <u>R</u> Depth (inc	.ayer (if observed efusal			Hydric Soil Present?	Yes 🔾 No 🖲
Restrictive L Type: <u>R</u> Depth (inc	.ayer (if observed efusal			Hydric Soil Present?	Yes 🔾 No 🖲
Restrictive L Type: <u>R</u> Depth (inc	.ayer (if observed efusal			Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>R</u> Depth (inc	.ayer (if observed efusal			Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>R</u> Depth (inc	.ayer (if observed efusal			Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>R</u> Depth (inc	.ayer (if observed efusal			Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>R</u> Depth (inc	.ayer (if observed efusal			Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>R</u> Depth (inc	.ayer (if observed efusal			Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>R</u> Depth (inc	.ayer (if observed efusal			Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>R</u> Depth (inc	.ayer (if observed efusal			Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>R</u> Depth (inc	.ayer (if observed efusal			Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>R</u> Depth (inc	.ayer (if observed efusal			Hydric Soil Present?	Yes O No O



AN15 Wetland



AN15 Upland

					5	
Project/Site: Antrim Wind Project	City/County:	Antrim		Sampling Date: 1	16-Aug-11	
Applicant/Owner: Eolian Renewable B		State	: NH	Sampling Point:	an16 wetland	
Investigator(s): AF JG		Section, T	Section, Township, Range: S. T. R.			
Landform (hillslope, terrace, etc.):	Terrace	Local relief (c	oncave, convex, no	ne): flat	Slope:	0.0 % / 0.0
Subregion (LRR or MLRA):	(LRR or MLRA):				Dat	tum:
Soil Map Unit Name:		p		NWI classi	fication: PEM	
Are Vegetation , Soil Are Vegetation , Soil Summary of Findings - At	, or Hydrology naturally	tly disturbed? problematic? sampling p	(If needed, ex	. ,	vers in Remarks.)	
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes ● No ○ Yes ● No ○ Yes ● No ○		e Sampled Area n a Wetland?	Yes 🖲 No 🤇)	
Remarks: (Explain alternative provide the provided and the provided th	cedures here or in a separate report etland disturbance. Upslope of a s	•	ture.			

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)		
Primary Indicators (minimum of one required; of	Surface Soil Cracks (B6)			
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)		
✓ High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)		
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)		
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)		
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)		
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)		
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)		
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)		
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)		
Sparsely Vegetated Concave Surface (B8)				
Field Observations:				
Surface Water Present? Yes O No 🖲	Depth (inches):			
Water Table Present? Yes No	Depth (inches): 0			
Saturation Present? Yes No	Wetland Hy Depth (inches): 0	/drology Present? Yes 🖲 No 🔾		
Describe Recorded Data (stream gauge, monitor	ring well, aerial photos, previous inspections), if av	vailable:		
Remarks:				

	113	Dominant Species?		Sampling Point: an16 wetland
Tree Stratum (Plot size:)	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
1	0	0.0%		Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)
2	0	0.0%		
2	0	0.0%		Total Number of Dominant
3				Species Across All Strata: (B)
4	0	0.0%		Percent of dominant Species
5		0.0%		That Are OBL, FACW, or FAC:100.0% (A/B)
6		0.0%		
7	0	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	0	= Total Cove	r	Total % Cover of: Multiply by: OBL species 55 x 1 = 55
1. Spiraea alba	15	✓ 50.0%	FACW+	FACW species $58 \times 2 = 116$
2. Spiraea tomentosa	15	50.0%	FACW	
3	0	0.0%		
4.	0	0.0%		FACU species $0 \times 4 = 0$
5	0	0.0%		UPL species x 5 =
6.	0	0.0%	-	Column Totals: 113 (A) 171 (B)
7.	0	0.0%		Prevalence Index = $B/A = 1.513$
/·		= Total Cove		Prevalence Index = $B/A = 1.513$
Herb Stratum (Plot size: 5')	30		1	Hydrophytic Vegetation Indicators:
1.Carex crinita	50	60.2%	OBL	Rapid Test for Hydrophytic Vegetation
2.Scirpus cyperinus	5	6.0%	FACW+	✓ Dominance Test is > 50%
3. Scirpus atrovirens	5	6.0%	OBL	✓ Prevalence Index is ≤3.0 1
4. Onoclea sensibilis	20		FACW	Morphological Adaptations ¹ (Provide supporting
				data in Remarks or on a separate sheet)
5. Impatiens capensis 6.	3	3.6%	FACW	Problematic Hydrophytic Vegetation ¹ (Explain)
	0	0.0%		
7	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8	0	0.0%		· · · · ·
9	0	0.0%		Definitions of Vegetation Strata:
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0	0.0%		at breast height (DBH), regardless of height.
12	0	0.0%		Sopling/obrub Woody plants loss than 2 in DPH and
Woody Vine Stratum (Plot size:)	83	= Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		Weady vine All weady vince greater than 2.20 ft in
Δ	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in height.
	0	= Total Cove		
				Hydrophytic
				Vegetation Present? Yes • No ·
				Present? 100 - 100 -
				1
Remarks: (Include photo numbers here or on a separate she	et.)			

Profile Desc Depth	ription: (De		the depth	needed to				onfirm the	absence of indicators.)		
(inches)	- Color (i	Matrix moist)	- % -	Color (dox Featu		Loc ²	Texture	Remarks	
0-7	10YR	3/2	100%						Loam	noniano	
7-16	2.5Y	4/2	95%	10YR	4/6	5%	C	М	Fine Sandy Loam		
7-10	2.31	4/2	7376	IUIK	470	576	U			·	
¹ Type: C=Cor	ncentration. D	- Depletio	n. RM=Red	uced Matrix,	CS=Cover	ed or Coate	ed Sand Gra	ains ² Loc	ation: PL=Pore Lining. M=N	 Aatrix	
Hydric Soil										ematic Hydric Soils : ³	
Histosol				Poly	value Belo	w Surface ((S8) (LRR F	2,		ematic Hydric Solis :	
	ipedon (A2)			MLR	A 149B)					(LRR K, L, MLRA 149B) ox (A16) (LRR K, L, R)	
Black His	stic (A3)			L Thin	Dark Surf	face (S9) (I	LRR R, MLR	RA 149B)		or Peat (S3) (LRR K, L, R)	
Hydroge	n Sulfide (A4)					Mineral (F1					
Stratified	Layers (A5)				• •	Matrix (F2))		Dark Surface (S7) (LRR K, L) Polyvalue Below Surface (S8) (LRR K, L)		
Depleted	Below Dark S	Surface (A	.11)		eted Matr				Thin Dark Surface		
Thick Da	rk Surface (A	12)		Redox Dark Surface (F6)						Masses (F12) (LRR K, L, R)	
Sandy M	uck Mineral (S	61)				Surface (F	7)			ain Soils (F19) (MLRA 149B)	
	eyed Matrix (S4)			ox Depres	sions (F8)			_	6) (MLRA 144A, 145, 149B)	
	edox (S5)								Red Parent Mater		
	Matrix (S6)								Very Shallow Darl	k Surface (TF12)	
Dark Sur	face (S7) (LR	r r, mlra	A 149B)						Other (Explain in	Remarks)	
³ Indicators of	of hydrophytic	vegetatio	on and wetla	nd hydrology	must be	present, un	less disturb	ed or prob	lematic.		
Restrictive I	_aver (if obs	erved):									
Type:											
Depth (in	ches):								Hydric Soil Present?	Yes 🔍 No 🔾	
Remarks:											
Remains.											

Project/Site: Antrim Wind Project	City/County	Antrim		Sampling Date: 16-Aug-11		
Applicant/Owner: Eolian Renewable Energy, LLC		Sta	ite:	Sampling Point:	an16 upl	land
Investigator(s): AF JG	Section,	Township, Range:	S. T.	R.		
Landform (hillslope, terrace, etc.): Hillside	Local relief (concave, convex, r	none): flat	Slope:	10.0 % /	5.7°
Subregion (LRR or MLRA):	i.:	Long	g.:	Dat	um:	
Soil Map Unit Name:	-		NWI classif	ication:		
	antly disturbed? ly problematic?	(If needed,	(If no, explain in Circumstances" p explain any answo ns, transects	oresent? Yes		etc.
Hydrophytic Vegetation Present?YesNoHydric Soil Present?YesNoWetland Hydrology Present?YesNo		ne Sampled Area hin a Wetland?	Yes 🔾 No 🖲)		
Remarks: (Explain alternative procedures here or in a separate r	∍port.)					

Secondary Indicators (minimum of 2 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)		
loav Present? Yes 🔿 No 🖲		
logy Present? Yes 🔾 No 🖲		
ble:		

Dominan				Sampling Point: an16 upland		
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:		
	20	66.7%	FACU	Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)		
	10	33.3%	FACU			
2. Betula papyrifera 3.		0.0%		Total Number of Dominant		
		0.0%		Species Across All Strata: (B)		
4	0	0.0%		Percent of dominant Species		
5		0.0%		That Are OBL, FACW, or FAC: 0.0% (A/B)		
6	0					
7		0.0%		Prevalence Index worksheet:		
Sapling/Shrub Stratum (Plot size: 15')	30	= Total Cove	r	Total % Cover of: Multiply by:		
1. Pinus strobus	10	19.6%	FACU	OBL species $0 \times 1 = 0$		
2. Fagus grandifolia		64.7%	FACU	FACW species $0 \times 2 = 0$		
3. Viburnum lentago		9.8%	FAC	FAC species $5 \times 3 = 15$		
A place where		5.9%	FACU	FACU speci es 106 x 4 = 424		
E		0.0%		UPL species $\frac{80}{100}$ x 5 = $\frac{400}{100}$		
6		0.0%		Column Totals: 191 (A) 839 (B)		
7		0.0%				
<i>I</i>		= Total Cove		Prevalence Index = B/A = 4.393		
Herb Stratum (Plot size: 5')	51	= Total Cove	r	Hydrophytic Vegetation Indicators:		
1.Rubus alumnus	10	9.1%	FACU-	Rapid Test for Hydrophytic Vegetation		
2. Dennstaedtia punctilobula	80	72.7%	UPL	Dominance Test is > 50%		
3 Acor coochorum	<u> </u>	4.5%	FACU-	Prevalence Index is \leq 3.0 ¹		
4.Solidago canadensis		13.6%	FACU	Morphological Adaptations ¹ (Provide supporting		
5.		0.0%	17100	data in Remarks or on a separate sheet)		
6.	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)		
7		0.0%		¹ Indicators of hydric soil and wetland hydrology must		
8.	0	0.0%		be present, unless disturbed or problematic.		
9.	0	0.0%		Definitions of Vegetation Strata:		
10.	0	0.0%				
11.	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.		
12.	0	0.0%		a bleast height (DDH), regardless of height.		
		= Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall		
Woody Vine Stratum (Plot size:)						
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.		
2	0	0.0%				
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in		
4				height.		
	0	= Total Cove	r			
				Hydrophytic		
				Vegetation Present? Yes No •		
				Present? Yes V No 🛡		
				1		
Remarks: (Include photo numbers here or on a separate sh	eet.)					

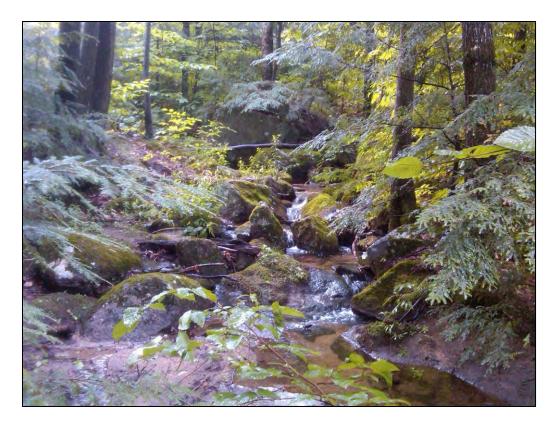
Depth		Matrix		Redox Features		
(inches)	Color (%	Color (moist) % Type 1 Loc		Remarks
0-4	10YR	3/2	100%		Loam	
4-6	10YR	5/8	100%		Fine Sandy Loam	
¹ Type: C=Co	ncentration. D	D=Depletio	n. RM=Red	uced Matrix, CS=Covered or Coated Sand Grains 2	Location: PL=Pore Lining. M=	Matrix
Hydric Soil	Indicators:				Indicators for Prob	elematic Hydric Soils : ³
Histosol				Polyvalue Below Surface (S8) (LRR R, MLRA 149B)	_) (LRR K, L, MLRA 149B)
	pipedon (A2)			MLRA 1498) Thin Dark Surface (S9) (LRR R, MLRA 1498)	Const Drairie Do	dox (A16) (LRR K, L, R)
Black Hi				Loamy Mucky Mineral (F1) LRR K, L)	5 cm Mucky Pea	t or Peat (S3) (LRR K, L, R)
	en Sulfide (A4))		Loamy Gleyed Matrix (F2)	Dark Surface (S	7) (LRR K, L)
	d Layers (A5) d Below Dark :	Surface (A	11)	Depleted Matrix (F3)		Surface (S8) (LRR K, L)
	ark Surface (A		11)	Redox Dark Surface (F6)		e (S9) (LRR K, L)
_	luck Mineral (S			Depleted Dark Surface (F7)		Masses (F12) (LRR K, L, R)
_	leyed Matrix (Redox Depressions (F8)		lain Soils (F19) (MLRA 149B)
_	edox (S5)	(- ')			Red Parent Mate	A6) (MLRA 144A, 145, 149B)
	Matrix (S6)					rk Surface (TF12)
Dark Su	rface (S7) (LR	R R, MLRA	149B)		Other (Explain ir	
³ Indicators	of hydrophytic	c vegetatio	n and wetla	nd hydrology must be present, unless disturbed or p		
	Layer (if obs			, , , , ,		
	stone refusal					
Depth (in					Hydric Soil Present?	Yes 🔾 No 🖲
Remarks:						
Remarks:						



AN16 Wetland



AN16 Wetland



AN17 Stream (associated with AN18 Wetland)

Project/Site: Antrim Wind Project		City/County: Antrim		Sampling Date: 1	6-Aug-11	
Applicant/Owner: Eolian Renewable E	nergy, LLC	State	e: NH	Sampling Point:	an18a wetland	
Investigator(s): AF JG		Section, Township, Range: S. T.		R.		
Landform (hillslope, terrace, etc.):	Gulch or Gully	Local relief (concave, convex, none): concave Slope			12.0 % / 6.8°	
Subregion (LRR or MLRA):	Lat.:	Long.	:	Dat	tum:	
Soil Map Unit Name:			NWI classif	ication: PSS		
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes No						
Hydric Soil Present? Wetland Hydrology Present?	Yes Ves No Yes No Yes Yes Victoria	Is the Sampled Area within a Wetland?	Yes 🖲 No C)		
Remarks: (Explain alternative pro Isolated PSS wetland entirely with		•	hes of water.			

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)			
Primary Indicators (minimum of one required;	Surface Soil Cracks (B6)				
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)			
✓ High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)			
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)			
Water Marks (B1)		Crayfish Burrows (C8)			
Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)				
	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)			
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)			
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)			
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)			
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)			
Sparsely Vegetated Concave Surface (B8)		✓ FAC-neutral Test (D5)			
Field Observations:					
Surface Water Present? Yes O No 🖲	Depth (inches):				
Water Table Present? Yes No	Depth (inches): 7	drology Present? Yes 🖲 No 🔿			
Saturation Present? (includes capillary fringe) Yes • No	Wetland Hy Depth (inches):0	drology Present? Yes 🔍 No 🔾			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks:					

		Dominant Species?		Sampling Point: an18a wetland
Tree Stratum (Plot size:)	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
 1	0	0.0%		Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)
0	0	0.0%		
		0.0%		Total Number of Dominant
3	0			Species Across All Strata: 4 (B)
4		0.0%		Percent of dominant Species
5		0.0%		That Are OBL, FACW, or FAC:(A/B)
6		0.0%		
7	0	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	0	= Total Cove	r	Total % Cover of: Multiply by: 0BL species 20 x 1 = 20
1. Salix nigra	10	76.9%	FACW+	·
2. Fraxinus pennsylvanica	0	0.0%	FACW	
3. Cornus stolonifera		23.1%	FACW+	FAC species $0 \times 3 = 0$
4.		0.0%		FACU species $0 \times 4 = 0$
5.		0.0%		UPL species $\begin{array}{c} 0 \\ \hline \end{array}$ x 5 = $\begin{array}{c} 0 \\ \hline \end{array}$
6	0	0.0%		Column Totals: 99 (A) 178 (B)
6	0	0.0%	·	
7		= Total Cove	 r	Prevalence Index = B/A = 1.798
Herb Stratum (Plot size: 5')				Hydrophytic Vegetation Indicators:
1.Eupatoriadelphus dubius	0	0.0%	FACW	Rapid Test for Hydrophytic Vegetation
2. Onoclea sensibilis	33	38.4%	FACW	Dominance Test is > 50%
3.Scirpus cyperinus		9.3%	FACW+	✓ Prevalence Index is $\leq 3.0^{1}$
4. Carex crinita	10	11.6%	OBL	Morphological Adaptations ¹ (Provide supporting
5.0smunda cinnamomea	25	29.1%	FACW	data in Remarks or on a separate sheet)
6		11.6%	OBL	Problematic Hydrophytic Vegetation ¹ (Explain)
0.carex lurida 7.				¹ Indicators of hydric soil and wetland hydrology must
	0	0.0%		be present, unless disturbed or problematic.
8	0	0.0%		Definitions of Vegetation Strata:
9	0	0.0%		Demitions of Vegetation Strata.
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0	0.0%		at breast height (DBH), regardless of height.
12	0	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)	86	= Total Cove	r	greater than 3.28 ft (1m) tall.
<u> </u>	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
0	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		
л	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in height.
-+				hoight.
	0	= Total Cove	r	
				Hydrophytic
				Vegetation Present? Yes • No
				1
Remarks: (Include photo numbers here or on a separate she	et.)			

	ription: (Des	cribe to	the depth	needed to document	the indicator of	or confirm the	absence of indicators.)	
Depth (inches)		Matrix			dox Features			
	Color (n	•	%	Color (moist)	<u>%</u> Typ	e ¹ Loc ²	Texture	Remarks
0-10	10YR	3/2	100%				Sandy Loam	
10-20	2.5Y	4/1	100%				gravelly sand	alluvial soils
¹ Type: C=Cor	ncentration. D=	=Depletio	n. RM=Red	uced Matrix, CS=Cover	ed or Coated San	d Grains ² Loca	ation: PL=Pore Lining. M=	=Matrix
Hydric Soil		•						blematic Hydric Soils : ³
Histosol				Polyvalue Belov	v Surface (S8) (L	RR R,		
	ipedon (A2)			MLRA 149B)				D) (LRR K, L, MLRA 149B)
Black His				Thin Dark Surf	ace (S9) (LRR R	MLRA 149B)		dox (A16) (LRR K, L, R)
	n Sulfide (A4)			Loamy Mucky I	Aineral (F1) LRR	K, L)		at or Peat (S3) (LRR K, L, R)
	Layers (A5)			Loamy Gleyed	Matrix (F2)		Dark Surface (S	
	Below Dark S	urfaco (A	11)	Depleted Matri				/ Surface (S8) (LRR K, L)
	rk Surface (A1			Redox Dark Su				ce (S9) (LRR K, L)
				Depleted Dark			Iron-Manganese	e Masses (F12) (LRR K, L, R)
	uck Mineral (S			Redox Depress			Piedmont Flood	plain Soils (F19) (MLRA 149B)
	eyed Matrix (S	54)					Mesic Spodic (T	A6) (MLRA 144A, 145, 149B)
Sandy Re							Red Parent Mate	erial (TF2)
	Matrix (S6)						Very Shallow Da	ark Surface (TF12)
Dark Sur	face (S7) (LRR	R, MLRA	A 149B)				Other (Explain i	n Remarks)
³ Indicators o	of hydrophytic	vegetatio	n and wetla	nd hydrology must be p	resent, unless di	sturbed or probl	ematic.	
Restrictive L	aver (if obse	erved):						
Type:	,							
Depth (inc	ches).						Hydric Soil Present	? Yes 🖲 No 🔾
Remarks:								

Project/Site: Antrim Wind Project	City/County: A	ntrim	Sampling Date: 16-Aug-11			
Applicant/Owner: Eolian Renewable E	nergy, LLC	_	Sta	te: NH	Sampling Point:	an18a upland
Investigator(s): AF JG		Section, Tow	nship, Range:	S. T.	R.	
Landform (hillslope, terrace, etc.):	Hillside	Local relief (con	cave, convex, n	ione): convex	Slope:	20.0 % / 11.3 °
Subregion (LRR or MLRA):	Lat.:		Long	j.:	Dat	tum:
Soil Map Unit Name:				NWI classi	fication:	
Are climatic/hydrologic conditions o Are Vegetation , Soil Are Vegetation , Soil Summary of Findings - At	, or Hydrology Significant , or Hydrology naturally p	tly disturbed? problematic?	Are "Normal (If needed, e	(If no, explain ir Circumstances" explain any answ is, transects	present? Yes	
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes ○ No ● Yes ○ No ● Yes ○ No ●		ampled Area Wetland?	Yes 🔿 No 🖲)	
Remarks: (Explain alternative prod Maintained ROW	edures here or in a separate repo	rt.)				

		Secondary Indicators (minimum of 2 required)				
, , ,	Wetland Hydrology Indicators:					
Primary Indicators (minimum of one required;	check all that apply)	Surface Soil Cracks (B6)				
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)				
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)				
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)				
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)				
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)				
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)				
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)				
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)				
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)				
Sparsely Vegetated Concave Surface (B8)	<u> </u>	FAC-neutral Test (D5)				
Field Observations:						
Surface Water Present? Yes O No 💿	Depth (inches):					
Water Table Present? Yes O No O	Depth (inches):	drology Present? Yes 🔿 No 🖲				
Saturation Present? (includes capillary fringe) Yes O No O	Wetland Hy Depth (inches):	drology Present? Yes 🔾 No 🖲				
Describe Recorded Data (stream gauge, monit	oring well, aerial photos, previous inspections), if av	ailable:				
Remarks:						

· · ·		Dominant Species?		Sampling Point: an18a upland
Tree Stratum (Plot size:)	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
<u> </u>	0	0.0%		Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)
0		0.0%		
		0.0%		Total Number of Dominant
3		0.0%		Species Across All Strata: 2 (B)
4				Percent of dominant Species
5		0.0%		That Are OBL, FACW, or FAC:
6		0.0%		
7	0	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size:)	0	= Total Cove	r	Total % Cover of: Multiply by: OBL species 0 x 1 = 0
1	0	0.0%		FACW speciles $50 \times 2 = 100$
2		0.0%		
3	0	0.0%		
4	0	0.0%		
5.		0.0%		UPL species $50 \times 5 = 250$
6.	0	0.0%		Column Totals: 108 (A) 382 (B)
7	0	0.0%		Prevalence Index = B/A = 3.537
Herb Stratum (Plot size: 5')	0	= Total Cove	r	Hydrophytic Vegetation Indicators:
Herb Stratum (FIOL SIZE. 5		_		Rapid Test for Hydrophytic Vegetation
1_Phalaris arundinacea	50	✔ 46.3%	FACW+	$\Box \text{ Dominance Test is } 50\%$
2. Dennstaedtia punctilobula	50	46.3%	UPL	Prevalence Index is $\leq 3.0^{1}$
3. Solidago canadensis	8	7.4%	FACU	
4	0	0.0%		Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5.	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6.	0	0.0%		
7.	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must
8.	0	0.0%		be present, unless disturbed or problematic.
9.	0	0.0%		Definitions of Vegetation Strata:
10.	0	0.0%		
11.	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
12.	0	0.0%		a broadt height (bbh), rogardiodd o'r height.
Woody Vine Stratum (Plot size:)		= Total Cove	·	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
1	-			size, and woody plants less than 3.28 ft tall.
2	0	0.0%		
3				Woody vine - All woody vines greater than 3.28 ft in
4	0	0.0%		height.
	0	= Total Cove	ſ	
				Hydrophytic
				Vegetation Present? Yes O No •
Remarks: (Include photo numbers here or on a separate sh	eet.)			

(inches)		rix	Red	ox Features			
	Color (moist	t) %	Color (moist)	% Type ¹	Loc ²	Texture	Remarks
10-20	10YR 3.	/2 100%				Sandy Loam	
	10YR 4,	/4 100%				Sandy Loam	
						,	
						,	
						·	
						,	
¹ Type: C=Conce	ntration. D=Dep	oletion. RM=Red	uced Matrix, CS=Covere	d or Coated Sand Grain	s ² Locat	tion: PL=Pore Lining. M=M	atrix
Hydric Soil Ind	dicators:					Indicators for Proble	matic Hydric Soils : ³
Histosol (A1)		Polyvalue Below	Surface (S8) (LRR R,			(LRR K, L, MLRA 149B)
Histic Epipe	don (A2)		MLRA 149B)				x (A16) (LRR K, L, R)
Black Histic	(A3)			ce (S9) (LRR R, MLRA	149B)		or Peat (S3) (LRR K, L, R)
Hydrogen S				ineral (F1) LRR K, L)		Dark Surface (S7)	
Stratified La	•		Loamy Gleyed N				urface (S8) (LRR K, L)
_	elow Dark Surfac	ce (A11)	Depleted Matrix			Thin Dark Surface	
_	Surface (A12)		Redox Dark Sur				asses (F12) (LRR K, L, R)
	Mineral (S1)		Depleted Dark S			Piedmont Floodpla	in Soils (F19) (MLRA 149B)
	ed Matrix (S4)		Redox Depressi	ons (F8)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
Sandy Redo						Red Parent Materia	al (TF2)
Stripped Ma						Very Shallow Dark	Surface (TF12)
Dark Surface	e (S7) (LRR R, N	лlra 149B)				Other (Explain in R	emarks)
³ Indicators of h	ydrophytic vege	tation and wetla	and hydrology must be pr	esent, unless disturbed	l or proble	matic.	
Restrictive Lay	er (if observe	d):					
Turner							
iype:	es):					Hydric Soil Present?	Yes 🔿 No 🖲
Type: Depth (inche	,						
Depth (inche							
Depth (inche							
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AN18a Wetland



AN18a Upland

Project/Site: Antrim Wind Project		City/County: Antrim		Sampling Date: 1	17-Aug-11	
Applicant/Owner: Eolian Renewable E	nergy, LLC	State	: NH	Sampling Point:	an18b wetland	
Investigator(s): AF JG		Section, Township, Range: S.	Т.	R.		
Landform (hillslope, terrace, etc.):	Hillside	Local relief (concave, convex, nor	ne): undulating	g Slope:	0.0 % / 0.0	
Subregion (LRR or MLRA):	Lat.:	Long.:		Da	tum:	
Soil Map Unit Name:			NWI classifi	ication: PSS	-	
Are Vegetation , Soil . Are Vegetation , Soil . Summary of Findings - At	, or Hydrology 🗌 naturally p	ly disturbed? Are "Normal Coroblematic? (If needed, ex	If no, explain in ircumstances" p plain any answe , transects ,	ers in Remarks.)		
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes ● No ○ Yes ● No ○ Yes ● No ○	Is the Sampled Area within a Wetland?	Yes 🖲 No 🔾			
Remarks: (Explain alternative pro Isolated PSS wetland within skidd	cedures here or in a separate repo er trail crossing stream AN17. Cou	•				

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)		
Primary Indicators (minimum of one required;	check all that apply)	Surface Soil Cracks (B6)		
Surface Water (A1)	✓ Water-Stained Leaves (B9)	✓ Drainage Patterns (B10)		
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)		
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)		
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)		
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)		
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)		
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)		
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)		
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)		
Sparsely Vegetated Concave Surface (B8)		✓ FAC-neutral Test (D5)		
Field Observations:				
Surface Water Present? Yes O No 🖲	Depth (inches):			
Water Table Present? Yes O No 🖲	Depth (inches):			
Saturation Present? Yes • No ·	Wetland Hy Depth (inches): 0	/drology Present? Yes 🖲 No 🔾		
Describe Recorded Data (stream gauge, monitor	pring well, aerial photos, previous inspections), if av	ailable:		
Remarks:				

		Dominant Species?		Sampling Point: an18b wetland
Tree Stratum (Plot size:)	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
1	0	0.0%		Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)
2.	0	0.0%		
2	0	0.0%		Total Number of Dominant
3	0	0.0%		Species Across All Strata: (B)
4				Percent of dominant Species
5	0	0.0%		That Are OBL, FACW, or FAC:100.0% (A/B)
6	0	0.0%		
7	0	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	0	= Total Cove	r	Total % Cover of: Multiply by: OBL species 35 x 1 = 35
1. Spiraea tomentosa	33	68.8%	FACW	FACW species $148 \times 2 = 296$
2. Fraxinus pennsylvanica	15	31.3%	FACW	
3	0	0.0%		
4	0	0.0%		FACU species $0 \times 4 = 0$
5.	0	0.0%		UPL species $0 \times 5 = 0$
6.	0	0.0%		Column Totals: 183 (A) 331 (B)
7.	0	0.0%		Prevalence Index = B/A = 1.809
		= Total Cove		
Herb Stratum (Plot size: 5')	40	- 101010000	•	Hydrophytic Vegetation Indicators:
1. Onoclea sensibilis	20	14.8%	FACW	Rapid Test for Hydrophytic Vegetation
2.0smunda cinnamomea	5	3.7%	FACW	Dominance Test is > 50%
3 Canada Arlan anna	 15	11.1%	OBL	\checkmark Prevalence Index is \leq 3.0 ¹
4.Carex lurida				Morphological Adaptations ¹ (Provide supporting
5 Deterrities		14.8%	OBL	data in Remarks or on a separate sheet)
5. Rubus hispidus	50	✓ 37.0%	FACW	Problematic Hydrophytic Vegetation ¹ (Explain)
6. Aster umbellatus		✓ 18.5%	FACW	1
7	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8	0	0.0%		
9	0	0.0%		Definitions of Vegetation Strata:
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0	0.0%		at breast height (DBH), regardless of height.
12.	0	0.0%		Configuration to the state land them 2 in DDU and
Woody Vine Stratum (Plot size:)	135	= Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
0	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in height.
4				noight.
	0	= Total Cove	r	
				Hydrophytic
				Vegetation Present? Yes • No ·
				1
Remarks: (Include photo numbers here or on a separate she	et.)			

Profile Desc Depth	ription: (De		the depth	needed to				nfirm the	absence of indicators.)		
(inches)	- Color (i	Matrix moist)	- %	Color (dox Featu %			Texture	Rem	narks
0-9	10YR	3/2				_			Fine Sandy Loam		
9-13	2.5Y	4/2	85%	10YR	5/8	15%	С	М	Fine Sandy Loam		
	2101		0070		0,0						
		=Depletio	n. RM=Red	duced Matrix,	CS=Cover	ed or Coate	d Sand Gra	ains ² Loc	ation: PL=Pore Lining. M=N	latrix	
Hydric Soil									Indicators for Probl	ematic Hydri	c Soils: ³
Histosol					value Belo A 149B)	w Surface (S8) (LRR R		2 cm Muck (A10)	(LRR K, L, MLF	RA 149B)
	ipedon (A2)					ace (S9) (L	RR R. MLR	A 149B)	Coast Prairie Rede	ox (A16) (LRR	K, L, R)
Black His						Mineral (F1)		,	5 cm Mucky Peat	or Peat (S3) (L	RR K, L, R)
	n Sulfide (A4) I Layers (A5)				• •	Matrix (F2)			Dark Surface (S7)		
_	Below Dark S	Surface (A	11)		eted Matri				Polyvalue Below S		
	rk Surface (A		,	Red	ox Dark Su	urface (F6)			Thin Dark Surface		
	uck Mineral (S			Dep	eted Dark	Surface (F7	7)		Iron-Manganese M		
	leyed Matrix (Red	ox Depres	sions (F8)			Piedmont Floodpla		
	edox (S5)								Red Parent Mater		, 145, 1490)
Stripped	Matrix (S6)								Very Shallow Dark		2)
Dark Sur	face (S7) (LR	r r, mlra	149B)						Other (Explain in		-,
³ Indicators of	of hydrophytic	vegetatio	n and wetl	and hydrology	must be	present, un	less disturb	ed or prob			
Restrictive I						•		•			
	tony refuse	civeu).									
Depth (ind									Hydric Soil Present?	Yes 🖲	No 🔿
Remarks:	10										
Remains.											

Project/Site: Antrim Wind Project	City/County:	Antrim			Sampling Date: 17-Aug-11			
Applicant/Owner: Eolian Renewable Ene	ergy, LLC		S	state:	NH	Sampling Point:	an18b uj	pland
Investigator(s): AF JG		Section, To	ownship, Range	e: S.	т.	R.		
Landform (hillslope, terrace, etc.):	lillside	Local relief (c	oncave, convex	, none): undulatin	ng Slope:	3.0%/	1.7 °
Subregion (LRR or MLRA):	Lat.:		Lo	ong.:		Da	tum:	
Soil Map Unit Name:				_	NWI classif	fication:		
• • •	or Hydrology 🗌 naturally p	tly disturbed? problematic? sampling p	(If needed	nal Circ d, expl	•	present? Yes		etc.
	Yes No ● Yes No ● Yes No ● Yes O No ●		e Sampled Area n a Wetland?	Ŷ	es 🔿 No 🖲)		
Remarks: (Explain alternative proce	dures here or in a separate repo	ırt.)						

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)
Primary Indicators (minimum of one required;	Surface Soil Cracks (B6)	
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2)	 Oxidized Rhizospheres along Living Roots (C3) 	Saturation Visible on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aguitard (D3)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)		FAC-neutral Test (D5)
Field Observations:		
Surface Water Present? Yes O No 💿	Depth (inches):	
Water Table Present? Yes O No •	Depth (inches):	drology Present? Yes 🔿 No 🖲
Saturation Present? (includes capillary fringe) Yes O No O	Wetland Hyd Depth (inches):	drology Present? Yes 🔾 No 🖲
Describe Recorded Data (stream gauge, monit	oring well, aerial photos, previous inspections), if ava	ailable:
Remarks:		

	11.5	Dominant Species?		Sampling Point: an18b upland
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
		41.7%		Number of Dominant Species
1. Fagus grandifolia	25		FACU	That are OBL, FACW, or FAC: (A)
2. Tsuga canadensis	25		FACU	Total Number of Dominant
3. Ables balsamea	10	16.7%	FAC	Species Across All Strata:6 (B)
4. Quercus rubra	0	0.0%	FACU-	
5	0	0.0%		Percent of dominant Species That Are OBL, FACW, or FAC:33.3% (A/B)
6	0	0.0%		
7	0	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	60	= Total Cove	r	Total % Cover of:Multiply by:OBL speci es0x 1 =0
1. Betula alleghaniensis	25	45.5%	FAC	
2. Acer saccharum	25	45.5%	FACU-	FACW species $0 \times 2 = 0$
3. Pinus strobus	5	9.1%	FACU	FAC species $95 \times 3 = 285$
4.		0.0%		FACU species x 4 =452
		0.0%		UPL species $5 \times 5 = 25$
5	0	0.0%		Column Totals: 213 (A) 762 (B)
6	0			
1		0.0%		Prevalence Index = B/A = <u>3.577</u>
Herb Stratum (Plot size: 5')		- 10101 0010	•	Hydrophytic Vegetation Indicators:
1.Aralia nudicaulis	33	33.7%	FACU	Rapid Test for Hydrophytic Vegetation
2. Thelypteris noveboracensis	60	61.2%	FAC	Dominance Test is > 50%
3.Polygonatum pubescens	5	5.1%	UPL	Prevalence Index is $\leq 3.0^{1}$
4.	0	0.0%		Morphological Adaptations ¹ (Provide supporting
5.	0	0.0%		data in Remarks or on a separate sheet)
6.				Problematic Hydrophytic Vegetation ¹ (Explain)
	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must
7	0	0.0%		be present, unless disturbed or problematic.
8	0	0.0%		Definitions of Vegetation Strata:
9	0	0.0%		Deminitions of Vegetation Strata.
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0	0.0%		at breast height (DBH), regardless of height.
12	0	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)	98	= Total Cove	r	greater than 3.28 ft (1m) tall.
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		
Λ	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in height.
+				linght.
	0	= Total Cove	r	
				Hydrophytic Vegetation
				Present? Yes \bigcirc No \bigcirc
Domarke: (Include photo numbers here as an a constant	ot)			
Remarks: (Include photo numbers here or on a separate she	el. <i>j</i>			

7-14 10YR 7-14 10YR 10YR 10YR 1 10YR	3/2 100% 4/3 100%	Color (moist) % Type 1 Loc ²	•	
7-14 10YR 7-14 10YR 10YR 10YR 10YR	4/3 100%	Polyvalue Below Surface (S8) (LRR R,	Fine Sandy Loam	
I Type: C=Concentration. D=De Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5)		Polyvalue Below Surface (S8) (LRR R,	ation: PL=Pore Lining. M=Matrix	
Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5)	pletion. RM=Red	Polyvalue Below Surface (S8) (LRR R,	-	
Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5)	pletion. RM=Rec	Polyvalue Below Surface (S8) (LRR R,	-	
Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5)	pletion. RM=Red	Polyvalue Below Surface (S8) (LRR R,	-	
Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5)	epletion. RM=Red	Polyvalue Below Surface (S8) (LRR R,	-	
Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5)	pletion. RM=Rec	Polyvalue Below Surface (S8) (LRR R,	-	
Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5)	pletion. RM=Red	Polyvalue Below Surface (S8) (LRR R,	-	
Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5)	pletion. RM=Red	Polyvalue Below Surface (S8) (LRR R,	-	
Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5)	pletion. RM=Red	Polyvalue Below Surface (S8) (LRR R,	-	
Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5)	pletion. RM=Red	Polyvalue Below Surface (S8) (LRR R,	-	
Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5)	pletion. RM=Red	Polyvalue Below Surface (S8) (LRR R,	-	
Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5)	pletion. RM=Red	Polyvalue Below Surface (S8) (LRR R,	-	
Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5)	pletion. RM=Red	Polyvalue Below Surface (S8) (LRR R,	-	
Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5)	pletion. RM=Red	Polyvalue Below Surface (S8) (LRR R,	-	
 Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 			Indicators for Problematic Hydric Soils :	0
 Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 				3
Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5)		MI DA 140D)	2 cm Muck (A10) (LRR K, L, MLRA 149B)	
 Hydrogen Sulfide (A4) Stratified Layers (A5) 			$\Box Coast Prairie Redox (A16) (LRR K, L, MLRA 149B)$	
Stratified Layers (A5)		☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)	\Box 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)	
		Loamy Mucky Mineral (F1) LRR K, L)	\square Dark Surface (S7) (LRR K, L)	.)
Developed Delaws Devels Counter		Loamy Gleyed Matrix (F2)	Polyvalue Below Surface (S8) (LRR K, L)	
Depleted Below Dark Surfa	ace (A11)	Depleted Matrix (F3)	Thin Dark Surface (S9) (LRR K, L)	
Thick Dark Surface (A12)		Redox Dark Surface (F6)	Iron-Manganese Masses (F12) (LRR K, L, F	5)
Sandy Muck Mineral (S1)		Depleted Dark Surface (F7)	 Piedmont Floodplain Soils (F12) (ERCK, E, F 	
Sandy Gleyed Matrix (S4)		Redox Depressions (F8)	Mesic Spodic (TA6) (MLRA 144A, 145, 149	
Sandy Redox (S5)			Red Parent Material (TF2)	2)
Stripped Matrix (S6)			Very Shallow Dark Surface (TF12)	
Dark Surface (S7) (LRR R,	MLRA 149B)		Other (Explain in Remarks)	
³ Indicators of hydrophytic yea	etation and wetla	and hydrology must be present, unless disturbed or probl		
Restrictive Layer (if observe	ed):			
Type: Bouldery			Hydric Soil Present? Yes O No 🖲	
Depth (inches): 14				



AN18b Upland



AN18b Wetland



AN18 Wetland

Project/Site: Antrim Wind Project		City/County: Antrim	5	Sampling Date: 1	7-Aug-11		
Applicant/Owner: Eolian Renewable E	Energy, LLC	State: NH		Sampling Point:	AN18c wetland		
Investigator(s): AF JG		Section, Township, Range: S.	т.	R.			
Landform (hillslope, terrace, etc.):	Hillside	Local relief (concave, convex, none): unc	ndulating	Slope:	10.0%/ 5.7		
Subregion (LRR or MLRA):	Lat.:	Long.:		Da	tum:		
Soil Map Unit Name:		NWI classification: PSS/PEM					
Are Vegetation Soil Soil Summary of Findings - At	, or Hydrology 🗌 naturally p	Are "Normal Circumstal problematic? (If needed, explain any campling point locations, trans	y answer	s in Remarks.)			
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes ● No ○ Yes ● No ○ Yes ● No ○	Is the Sampled Area within a Wetland? Yes •	No O				
	ocedures here or in a separate repo d adjacent to Stream AN17. Boulde	•					

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)		
Primary Indicators (minimum of one required;	check all that apply)	Surface Soil Cracks (B6)		
Surface Water (A1)	Water-Stained Leaves (B9)	✓ Drainage Patterns (B10)		
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)		
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)		
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)		
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)		
Drift deposits (B3)	Stunted or Stressed Plants (D1)			
Algal Mat or Crust (B4)	Drift deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6)			
Iron Deposits (B5)				
Inundation Visible on Aerial Imagery (B7)				
Sparsely Vegetated Concave Surface (B8)	FAC-neutral Test (D5)			
Field Observations:				
Surface Water Present? Yes O No 🖲	Depth (inches):			
Water Table Present? Yes O No 🖲	Depth (inches):	ydrology Present? Yes 💿 No 🔿		
Saturation Present? Yes No	Wetland H	ydrology Present? Yes 🔍 No 🔾		
Describe Recorded Data (stream gauge, monito	pring well, aerial photos, previous inspections), if a	/ailable:		
Remarks:				

		Dominant Species?		Sampling Point: AN18c wetland
Tree Stratum (Plot size:)	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
	0	0.0%		Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)
2.	0	0.0%		That are OBL, FACW, or FAC: (A)
				Total Number of Dominant
3	0	0.0%		Species Across All Strata: 4 (B)
4	0	0.0%		Dereent of dominant Species
5		0.0%		Percent of dominant Species That Are OBL, FACW, or FAC:(A/B)
6		0.0%		
7	0	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	0	= Total Cove	r	Total % Cover of: Multiply by: OBL speci es 36 x 1 = 36
1. Acer rubrum	5	50.0%	FAC	
2. Fraxinus pennsylvanica	5	50.0%	FACW	FACW species $58 \times 2 = 116$
3.		0.0%		FAC species $5 \times 3 = 15$
4	0	0.0%		FACU species $0 \times 4 = 0$
5.	0	0.0%		UPL species $0 \times 5 = 0$
6.	0	0.0%		Column Totals: 99 (A) 167 (B)
7	0	0.0%		
1	-	= Total Cove		Prevalence Index = B/A = 1.687
Herb Stratum (Plot size: 5')	10		•	Hydrophytic Vegetation Indicators:
1.Carex crinita	25	28.1%	OBL	Rapid Test for Hydrophytic Vegetation
2.Phalaris arundinacea	33	37.1%	FACW+	✓ Dominance Test is > 50%
3.Onoclea sensibilis	15	16.9%	FACW	✓ Prevalence Index is \leq 3.0 ¹
4.Carex lurida	8	9.0%	OBL	Morphological Adaptations ¹ (Provide supporting
5 automa and a stress				data in Remarks or on a separate sheet)
		5.6%	FACW+	\Box Problematic Hydrophytic Vegetation ¹ (Explain)
6.Carex trisperma		3.4%	OBL	
7	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8	0	0.0%		
9	0	0.0%		Definitions of Vegetation Strata:
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0	0.0%		at breast height (DBH), regardless of height.
12	0	0.0%		Sapling/shruh, Woody plants loss than 3 in DBH and
Woody Vine Stratum (Plot size:)	89	= Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
<u> </u>	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
0	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in height.
4				neight.
	0	= Total Cove	r	
				Hydrophytic Vegetation
				Present? Yes • No
Domarka, (Include photo mumbers have a second state	ot)			1
Remarks: (Include photo numbers here or on a separate she	et.)			

(inches) Color (0-6 10YR 6-14 2.5Y	3/2 4/1	% 100% 90%	Color (m 10YR	4/4	<u>%</u> 10%	Type 1 C	M	Texture Fine Sandy Loam Fine Sandy Loam	Remarl	<s< th=""></s<>
6-14 2.5Y			10YR	4/4	10%		M			
		90%	10YR	4/4			M	Fine Sandy Loam		
					·					
Type: C=Concentration. E										
Type: C=Concentration. E					·					
Type: C=Concentration. E					·					
Type: C=Concentration. E					·					
Type: C=Concentration. E			·							
Type: C=Concentration. E										
Type: C=Concentration. E										
Type: C=Concentration. E										
Type: C=Concentration. E										
Type: C=Concentration. D										
Type: C=Concentration. D										
		PM-Podu	ed Matrix C	S-Covere	d or Coate	d Sand Gr		ation: PI-Pore Lining M-M	atriv	
Undria Sail Indiantara		- Redu		5-000010						3
Hydric Soil Indicators:			- Polyar		v Surface (S0) /I DD D)	Indicators for Proble		
Histic Epipedon (A2)				149B)	v Sunace (30) (LKK P		2 cm Muck (A10)		
Black Histic (A3)			🗌 Thin D	Dark Surfa	ace (S9) (L	rr r, mlf	RA 149B)	Coast Prairie Redo		
Hydrogen Sulfide (A4)			Loamy	y Mucky N	/lineral (F1)	LRR K, L)		5 cm Mucky Peat o		K, L, R)
Stratified Layers (A5)			Loamy	y Gleyed I	Matrix (F2)			Dark Surface (S7)		<
Depleted Below Dark	Surface (A1	1)	Deplet	ted Matrix	(F3)			Polyvalue Below S		ς, L)
Thick Dark Surface (A	12)				rface (F6)			Iron-Manganese M		K I B)
Sandy Muck Mineral (S1)				Surface (F7)		Piedmont Floodpla		
Sandy Gleyed Matrix (S4)		Redox	Depressi	ions (F8)			Mesic Spodic (TA6		
Sandy Redox (S5)								Red Parent Materia		0, 11, 2,
Stripped Matrix (S6)								Very Shallow Dark		
Dark Surface (S7) (LR	r r, mlra î	49B)						Other (Explain in F		
³ Indicators of hydrophytic	vegetation	and wetlar	d hydrology r	nust be p	resent, unl	ess disturb	ed or proble	ematic.		
Restrictive Layer (if obs	erved):									
Type: Boulders	,									
Depth (inches): 14								Hydric Soil Present?	Yes 🖲 🛛 N	o O
Remarks:										

Project/Site: Antrim Wind Project		City/County: Antrim		Sampling Date: 1	7-Aug-11
Applicant/Owner: Eolian Renewable E	nergy, LLC	Sta	ite: NH	Sampling Point:	AN18c upland
Investigator(s): AF JG		Section, Township, Range:	S. T.	R.	
Landform (hillslope, terrace, etc.):	Hillside	Local relief (concave, convex, r	none): convex	Slope:	5.0%/2.9°
Subregion (LRR or MLRA):	Lat.:	Long	g.:	Dat	tum:
Soil Map Unit Name:			NWI classi	fication:	
Are climatic/hydrologic conditions o Are Vegetation , Soil Are Vegetation , Soil Summary of Findings - At	, or Hydrology Significant , or Hydrology naturally p	IV disturbed? Are "Normal problematic? (If needed, a	(If no, explain ir Circumstances" explain any answ ns, transects	present? Yes (
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes ○ No ● Yes ○ No ● Yes ○ No ●	Is the Sampled Area within a Wetland?	Yes 🔿 No 🖲		
Remarks: (Explain alternative prod logged upland	edures here or in a separate repo	rt.)			

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)
Primary Indicators (minimum of one required;	check all that apply)	_ Surface Soil Cracks (B6)
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)		FAC-neutral Test (D5)
Field Observations:		
Surface Water Present? Yes O No •	Depth (inches):	
Water Table Present? Yes O No O	Depth (inches):	rdroloay Present? Yes 🔿 No 🖲
Saturation Present? (includes capillary fringe) Yes O No •	Depth (inches):	rdrology Present? Yes 🔾 No 🖲
Describe Recorded Data (stream gauge, monit	oring well, aerial photos, previous inspections), if av	ailable:
Remarks:		

	11.5	Dominant Species?		Sampling Point: AN18c upland
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	
1. Acer rubrum	15	33.3%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)
O Detaile elle elevelencia	10	 ✓ 33.3 % ✓ 22.2% 	FAC	
2 Disco militaria	10	22.2%	FACU	Total Number of Dominant
1 Turne tout				Species Across All Strata: 8 (B)
4. Tsuga canadensis			FACU	Percent of dominant Species
5	0	0.0%		That Are OBL, FACW, or FAC: 25.0% (A/B)
6		0.0%		
7		0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	45	= Total Cove	r	Total % Cover of: Multiply by:
1. Acer pensylvanicum	20	✔ 44.4%	FACU	OBL species $0 \times 1 = 0$
	10	22.2%	FACU-	FACW species $0 \times 2 = 0$
0 - 114 11		11.1%	FACU	FAC species 25 x 3 = 75
4		22.2%	FACU	FACU speci es $\frac{78}{12}$ x 4 = $\frac{312}{12}$
- · · · ·		0.0%	1700	UPL species $50 \times 5 = 250$
C	•	0.0%		Column Totals: 153 (A) 637 (B)
7	0	0.0%		
<i>I</i>		-		Prevalence Index = B/A = 4.163
Herb Stratum (Plot size: 5')	45	= Total Cove	r	Hydrophytic Vegetation Indicators:
1.Dennstaedtia punctilobula	50	✓ 79.4%	UPL	Rapid Test for Hydrophytic Vegetation
0	8	12.7%	FACU	Dominance Test is > 50%
∠.Solidago canadensis 3.Rubus alumnus	5	7.9%	FACU-	□ Prevalence Index is \leq 3.0 ¹
4.	0	0.0%		Morphological Adaptations ¹ (Provide supporting
5				data in Remarks or on a separate sheet)
5 6.		0.0%		\Box Problematic Hydrophytic Vegetation ¹ (Explain)
	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must
7	0	0.0%		be present, unless disturbed or problematic.
8	0	0.0%		Definitions of Vegetation Strata:
9	0	0.0%		Deminitions of Vegetation Strata.
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0	0.0%		at breast height (DBH), regardless of height.
12	0	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)	63	= Total Cove	r	greater than 3.28 ft (1m) tall
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4.	0	0.0%		height.
	0	= Total Cove	er	
				Hydrophytic
				Vegetation
				Present? Yes V No V
Remarks: (Include photo numbers here or on a separate she	et.)			

(inches)		Matrix		Redox Features		
	Color (m		%	Color (moist) % Type 1 Loc ²	Texture	Remarks
0-6	10YR	3/2	100%		Fine Sandy Loam	
6-10	2.5Y	5/1	100%		Fine Sandy Loam	
10-14	10YR	4/3	100%		Fine Sandy Loam	
Type: C=Cor	ncentration. D=	Depletio	n. RM=Red	uced Matrix, CS=Covered or Coated Sand Grains ² Loc	ation: PL=Pore Lining. M=N	atrix
Hydric Soil						
Histosol				Polyvalue Below Surface (S8) (LRR R,		ematic Hydric Soils : ³
	ipedon (A2)			MLRA 149B)		(LRR K, L, MLRA 149B) x (A16) (LRR K, L, R)
Black His				L Thin Dark Surface (S9) (LRR R, MLRA 149B)	_	or Peat (S3) (LRR K, L, R)
Hydroger	n Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)	Dark Surface (S7)	
Stratified	Layers (A5)			Loamy Gleyed Matrix (F2)		urface (S8) (LRR K, L)
_	Below Dark Su		11)	Depleted Matrix (F3)	Thin Dark Surface	
Thick Da	rk Surface (A12	2)		Redox Dark Surface (F6)		lasses (F12) (LRR K, L, R)
	uck Mineral (S1			Depleted Dark Surface (F7) Redox Depressions (F8)	Piedmont Floodpla	iin Soils (F19) (MLRA 149B)
	eyed Matrix (S4	4)			Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
Sandy Re					Red Parent Materi	al (TF2)
	Matrix (S6)		1400)		Very Shallow Dark	Surface (TF12)
Dark Sur	face (S7) (LRR				Other (Explain in I	Remarks)
		regetatio	n and wetla	nd hydrology must be present, unless disturbed or prob	lematic.	
³ Indicators c	of hydrophytic v					
	of hydrophytic v ayer (if obsei	rved):				
	ayer (if obsei	rved):				
Restrictive L	.ayer (if obser	rved):			Hydric Soil Present?	Yes 🔿 No 🖲
Restrictive L Type: B	.ayer (if obser	rved):			Hydric Soil Present?	Yes 🔘 No 🖲
Restrictive L Type: <u>B</u> Depth (inc	.ayer (if obser	rved):			Hydric Soil Present?	Yes 🔿 No 👁
Restrictive L Type: <u>B</u> Depth (inc	.ayer (if obser	rved):			Hydric Soil Present?	Yes 🔿 No 👁
Restrictive L Type: <u>B</u> Depth (inc	.ayer (if obser	rved):			Hydric Soil Present?	Yes 🔿 No 🖲
Restrictive L Type: <u>B</u> Depth (inc	.ayer (if obser	rved):			Hydric Soil Present?	Yes 🔿 No 🗩
Restrictive L Type: <u>B</u> Depth (inc	.ayer (if obsei oulders	rved):			Hydric Soil Present?	Yes 🔿 No 👁
Restrictive L Type: <u>B</u> Depth (inc	.ayer (if obsei oulders	rved):			Hydric Soil Present?	Yes 🔿 No 🖲
Restrictive L Type: <u>B</u> Depth (inc	.ayer (if obsei oulders	rved):			Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>B</u> Depth (inc	.ayer (if obsei oulders	rved):			Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>B</u> Depth (inc	.ayer (if obsei oulders	rved):			Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>B</u> Depth (inc	.ayer (if obsei oulders	rved):			Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>B</u> Depth (inc	.ayer (if obsei oulders	rved):			Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>B</u> Depth (inc	.ayer (if obsei oulders	rved):			Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>B</u> Depth (inc	.ayer (if obsei oulders	rved):			Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>B</u> Depth (inc	.ayer (if obsei oulders	rved):			Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>B</u> Depth (inc	.ayer (if obsei oulders	rved):			Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>B</u> Depth (inc	.ayer (if obsei oulders	rved):			Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>B</u> Depth (inc	.ayer (if obsei oulders	rved):			Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>B</u> Depth (inc	.ayer (if obsei oulders	rved):			Hydric Soil Present?	Yes O No O



AN18c Wetland



AN18c Upland

Project/Site: Antrim Wind Project		City/County:	Antrim			Sampling Date: 2	17-Aug-11	
Applicant/Owner: Eolian Renewable E	nergy, LLC		Si	tate:	NH	Sampling Point:	AN18d w	etland
Investigator(s): AF JG		Section, T	ownship, Range	e: S.	Т.	R.		
Landform (hillslope, terrace, etc.):	Hillside	Local relief (c	oncave, convex,	, none)	: concave	Slope:	5.0 % /	2.9 °
Subregion (LRR or MLRA):	Lat.:		Lo	ng.:	ł.	Da	tum:	
Soil Map Unit Name:					NWI classi	fication:		
Are climatic/hydrologic conditions of Are Vegetation , Soil Are Vegetation , Soil Summary of Findings - At	, or Hydrology Significant	tly disturbed? problematic?	(If needed	al Circu I, expla	umstances" in any answ	vers in Remarks.)		etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes ● No ○ Yes ● No ○ Yes ● No ○		e Sampled Area n a Wetland?	Ye	es 🖲 No 🤇)		
Remarks: (Explain alternative pro Isolated PSS associated with Strea	cedures here or in a separate repo am AN17	ort.)						

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)		
Primary Indicators (minimum of one required;	check all that apply)	Surface Soil Cracks (B6)		
Surface Water (A1)	Water-Stained Leaves (B9)	✓ Drainage Patterns (B10)		
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)		
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)		
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)		
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)		
Drift deposits (B3)	Stunted or Stressed Plants (D1)			
Algal Mat or Crust (B4)	Geomorphic Position (D2)			
Iron Deposits (B5)	Shallow Aquitard (D3)			
Inundation Visible on Aerial Imagery (B7)	Microtopographic Relief (D4)			
Sparsely Vegetated Concave Surface (B8)	FAC-neutral Test (D5)			
Field Observations:				
Surface Water Present? Yes O No 🖲	Depth (inches):			
Water Table Present? Yes O No 🖲	Depth (inches):			
Saturation Present? (includes capillary fringe) Yes • No	Wetland Hy Depth (inches): 0	/drology Present? Yes 🖲 No 🔾		
Describe Recorded Data (stream gauge, monito	pring well, aerial photos, previous inspections), if av	vailable:		
Remarks:				

		Dominant Species?		Sampling Point:	AN18d wetland
Tree Stratum (Plot size:)	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:	
	0	0.0%		Number of Dominant Species	3 (A)
1				That are OBL, FACW, or FAC:	<u> </u>
2	0	0.0%		Total Number of Dominant	
3	0	0.0%		Species Across All Strata:	<u> </u>
4	0	0.0%			
5		0.0%		Percent of dominant Species That Are OBL, FACW, or FAC:	100.0% (A/B)
6	0	0.0%		That Are OBE, TACW, OF TAC.	
7		0.0%		Prevalence Index worksheet:	
Sapling/Shrub Stratum (Plot size: 15')	0	= Total Cove	r		ultiply by:
1. Fraxinus pennsylvanica	15	60.0%	FACW		1 = 0
2. Betula alleghaniensis	10	40.0%	FAC	· · ·	2 = 226
3.		0.0%		· ·	3 = 30
4	0	0.0%		FACU species x	4 =
т Б	0	0.0%		0	5 = 0
5				Column Totals: 123 (A) 256 (B)
6		0.0%			
1	 25	0.0%	 r	Prevalence Index = B/A =	2.081
Herb Stratum (Plot size: 5')				Hydrophytic Vegetation Indicato	
1.Onoclea sensibilis	80	81.6%	FACW	Rapid Test for Hydrophytic	Vegetation
2.Eupatoriadelphus dubius	5	5.1%	FACW	✓ Dominance Test is > 50%	
3 Frankrige managed contract		3.1%	FACW	V Prevalence Index is $\leq 3.0^{1}$	
4.Osmunda cinnamomea				Morphological Adaptations	¹ (Provide supporting
5.			FACW	data in Remarks or on a sep	oarate sheet)
	0	0.0%		Problematic Hydrophytic Ve	egetation ¹ (Explain)
6	0	0.0%		1	
7	0	0.0%		¹ Indicators of hydric soil and w be present, unless disturbed or	etland hydrology must
8	0	0.0%		· · · ·	
9	0	0.0%		Definitions of Vegetation St	rata:
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 c	m) or more in diameter
11.	0	0.0%		at breast height (DBH), regardles	
12.	0	0.0%			
Woody Vine Stratum (Plot size:)	98	= Total Cove	r	Sapling/shrub - Woody plants les greater than 3.28 ft (1m) tall	ss than 3 in. DBH and
	0				hu) planta regardlaga of
1		0.0%		Herb - All herbaceous (non-wood size, and woody plants less than	3.28 ft tall.
2	0				
3	0	0.0%		Woody vine - All woody vines gr	eater than 3.28 ft in
4	0	0.0%		height.	
	0	= Total Cove	r		
				Hydrophytic	
				Vogotation	<u>`</u>
				Present? Yes No)
Remarks: (Include photo numbers here or on a separate she	et.)				

	ription: (Des		the depth	needed to				nfirm the	absence of indicators.)		
Depth (inches)	- Color (I	Matrix	- %	Color	Re moist)	dox Featu		Loc ²	Texture	Remarks	
0-7	10YR	3/2	100%		moisty		Туре		Fine Sandy Loam	Kennarks	
				10//D		100/					
7-11	2.5Y	4/2	90%	10YR	5/8	10%	C	М	Fine Sandy Loam		
									·		
									·		
										·	
¹ Type: C=Cor	ncentration. D	- Depletio	n. RM=Rec	luced Matrix,	CS=Cover	ed or Coate	d Sand Gra	ains ² Loc	ation: PL=Pore Lining. M=N		
Hydric Soil		•								ematic Hydric Soils :	3
Histosol				Poly	value Belo	w Surface (S8) (LRR R	1			
Histic Epi	ipedon (A2)			MLF	A 149B)					(LRR K, L, MLRA 149B)	
Black His				_		face (S9) (L				ox (A16) (LRR K, L, R) or Peat (S3) (LRR K, L, F	ור
Hydroger	n Sulfide (A4)					Mineral (F1)			Dark Surface (S7)		X)
Stratified	Layers (A5)					Matrix (F2)			_	Surface (S8) (LRR K, L)	
Depleted	Below Dark S	Surface (A	11)		leted Matr				Thin Dark Surface		
Thick Da	rk Surface (A1	12)		_		urface (F6)	_			Masses (F12) (LRR K, L,	R)
Sandy M	uck Mineral (S	51)				Surface (F	7)		_	ain Soils (F19) (MLRA 14	
	eyed Matrix (S	S4)			ox Depres	sions (F8)			_	5) (MLRA 144A, 145, 149	
Sandy Re									Red Parent Mater	ial (TF2)	
	Matrix (S6)								Very Shallow Darl	Surface (TF12)	
Dark Sur	face (S7) (LRI	r r, mlra	(149B)						Other (Explain in	Remarks)	
³ Indicators of	of hydrophytic	vegetatio	n and wetla	and hydrolog	must be	present, un	less disturb	ed or prob	lematic.		
Restrictive L	ayer (if obs	erved):									
Type:											
Depth (ind	ches):								Hydric Soil Present?	Yes $ullet$ No $igcap$	
Remarks:											

Project/Site: Antrim Wind Project	City/County: Antrim		Sampling Date: 17-Aug-11		
Applicant/Owner: Eolian Renewable E	nergy, LLC	Sta	nte: NH	Sampling Point:	an18d upland
Investigator(s): AF JG		Section, Township, Range:	S. T.	R.	
Landform (hillslope, terrace, etc.):	Hillside	Local relief (concave, convex, r	none): convex	Slope:	8.0 % / 4.6°
Subregion (LRR or MLRA):	Lat.:	Lon	g.:	Dat	tum:
Soil Map Unit Name:			NWI classi	fication:	
Are climatic/hydrologic conditions of Are Vegetation , Soil Are Vegetation , Soil Summary of Findings - At	, or Hydrology Significant , or Hydrology naturally p	tly disturbed? Are "Normal problematic? (If needed,	(If no, explain ir I Circumstances" explain any answ ns, transects	present? Yes	
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes No Yes No Yes No No	Is the Sampled Area within a Wetland?	Yes 🔿 No 🤇		
Remarks: (Explain alternative provologged upland	edures here or in a separate repo	ort.)			

Wetland Hydrology Indicators:	Secondary Indicators (minimum of 2 required)			
Primary Indicators (minimum of one required;	_ Surface Soil Cracks (B6)			
Surface Water (A1)	Surface Water (A1) Water-Stained Leaves (B9)			
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)		
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)		
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)		
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)		
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)		
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)		
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)		
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)		
Sparsely Vegetated Concave Surface (B8)		FAC-neutral Test (D5)		
Field Observations:				
Surface Water Present? Yes O No •	Depth (inches):			
Water Table Present? Yes O No O	Depth (inches):	rdroloay Present? Yes 🔿 No 🖲		
Saturation Present? (includes capillary fringe) Yes O No •	Depth (inches):	rdrology Present? Yes 🔾 No 🖲		
Describe Recorded Data (stream gauge, monit	oring well, aerial photos, previous inspections), if av	ailable:		
Remarks:				

	11.5	Dominant Species?		Sampling Point: an18d upland
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
				Number of Dominant Species
1. Tsuga canadensis	33	43.4%	FACU	That are OBL, FACW, or FAC: 2 (A)
2. Populus tremula	10	13.2%	FACU	Total Number of Dominant
3. Fraxinus pennsylvanica	33	43.4%	FACW	Species Across All Strata:6(B)
4		0.0%		
5	0	0.0%		Percent of dominant Species That Are OBL EACW or EAC: 33.3% (A/B)
6	0	0.0%		That Are OBL, FACW, or FAC:(A/B)
7	0	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')		= Total Cove	r	Total % Cover of: Multiply by:
1. Acer rubrum	25	33.3%	FAC	OBL species $0 \times 1 = 0$
2. Fagus grandifolia	45	20.0%	FACU	FACW species $33 \times 2 = 66$
		33.3%	FACU	FAC species $30 \times 3 = 90$
4		13.3%	FACU	FACU species x 4 =424
			FACU	UPL species $25 \times 5 = 125$
5		0.0%		Column Totals: 194 (A) 705 (B)
6		0.0%		
7		0.0%		Prevalence Index = B/A = <u>3.634</u>
Herb Stratum (Plot size: 5')	75	= Total Cove	r	Hydrophytic Vegetation Indicators:
1.Solidago canadensis	8	18.6%	FACU	Rapid Test for Hydrophytic Vegetation
				Dominance Test is > 50%
E-			FACU-	□ Prevalence Index is \leq 3.0 ¹
3.Dennstaedtla punctilobula	-	58.1%	UPL	Morphological Adaptations ¹ (Provide supporting
4. Trientalis borealis	5	11.6%	FAC	data in Remarks or on a separate sheet)
5	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6	0	0.0%		
7	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8	0	0.0%		· · · · ·
9	0	0.0%		Definitions of Vegetation Strata:
10.	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11.	0	0.0%		at breast height (DBH), regardless of height.
12.	0	0.0%		
Woody Vine Stratum (Plot size:)	43	= Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
` `	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
0	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		
J.	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in height.
4				
	0	= Total Cove	r	
				Hydrophytic
				Vegetation
				Present? Yes V No 🔍
Remarks: (Include photo numbers here or on a separate she	et.)			

(inches) [•]		rix		Re	edox Features			
	Color (mois	t) 9	% (Color (moist)	% Туре	1 Loc ²	Texture	Remarks
	10YR 3	/2 100	%				Loam	
6-10	2.5Y 5	/1 100	%				Fine Loamy Sand	
10-16	10YR 4	/3 100	 %				Fine Sandy Loam	
							·	
							<u> </u>	
		pletion. RM	=Reduced I	Matrix, CS=Cover	red or Coated Sand G	rains ² Loca	tion: PL=Pore Lining. M=Ma	
Hydric Soil In			г	-		_	Indicators for Proble	matic Hydric Soils : ³
Histosol (A			L	Polyvalue Belc MLRA 149B)	ow Surface (S8) (LRR	R,	2 cm Muck (A10) (LRR K, L, MLRA 149B)
Histic Epipe			Γ	-	face (S9) (LRR R, ML	.RA 149B)	Coast Prairie Redo	(A16) (LRR K, L, R)
Black Histic					Mineral (F1) LRR K, I			r Peat (S3) (LRR K, L, R)
Stratified La				Loamy Gleyed			Dark Surface (S7)	
	Below Dark Surfa	ce (A11)		Depleted Matr	rix (F3)			Irface (S8) (LRR K, L)
_	Surface (A12)			Redox Dark Su	urface (F6)		Thin Dark Surface	
	k Mineral (S1)			Depleted Dark	k Surface (F7)			asses (F12) (LRR K, L, R)
_	/ed Matrix (S4)			Redox Depres	ssions (F8)			n Soils (F19) (MLRA 149B)
Sandy Redo							Red Parent Materia) (MLRA 144A, 145, 149B) J. (TE2)
Stripped Ma	atrix (S6)						Very Shallow Dark	
Dark Surfac	ce (S7) (LRR R, I	MLRA 149B)				Other (Explain in R	
	budrophutio uogo	tation and	wetland hv	drology must be	present, unless distu	bed or proble		
³ Indicators of h	nvarobnytić vede				<u> </u>	p		
		-0						
Restrictive Lay	yer (if observe	d):						
Restrictive Lay	yer (if observe ulders	d):					Hydric Soil Present?	Yes 🔾 No 🖲
Restrictive Lay Type: <u>Bou</u> Depth (inche	yer (if observe ulders	d):					Hydric Soil Present?	Yes 🔿 No 🖲
Restrictive Lay Type: <u>Bou</u> Depth (inche Remarks:	yer (if observe ulders	d):					Hydric Soil Present?	Yes 🔍 No 🖲
Restrictive Lay Type: <u>Bou</u> Depth (inche	yer (if observe ulders	d):					Hydric Soil Present?	Yes 🔾 No 🖲
Restrictive Lay Type: <u>Bou</u> Depth (inche Remarks:	yer (if observe ulders	d):					Hydric Soil Present?	Yes 🔾 No 🖲
Restrictive Lay Type: <u>Bou</u> Depth (inche Remarks:	yer (if observe ulders	d):					Hydric Soil Present?	Yes 🔾 No 🖲
Restrictive Lay Type: <u>Bou</u> Depth (inche Remarks:	yer (if observe ulders	d):					Hydric Soil Present?	Yes 🗘 No 🖲
Restrictive Lay Type: <u>Bou</u> Depth (inche Remarks:	yer (if observe ulders	d):					Hydric Soil Present?	Yes 🔾 No 🖲
Restrictive Lay Type: <u>Bou</u> Depth (inche Remarks:	yer (if observe ulders	d):					Hydric Soil Present?	Yes 🔾 No 🖲
Restrictive Lay Type: <u>Bou</u> Depth (inche Remarks:	yer (if observe ulders	d):					Hydric Soil Present?	Yes O No O
Restrictive Lay Type: <u>Bou</u> Depth (inche Remarks:	yer (if observe ulders	d):					Hydric Soil Present?	Yes O No O
Restrictive Lay Type: <u>Bou</u> Depth (inche Remarks:	yer (if observe ulders	d):					Hydric Soil Present?	Yes O No O
Restrictive Lay Type: <u>Bou</u> Depth (inche Remarks:	yer (if observe ulders	d):					Hydric Soil Present?	Yes O No O
Restrictive Lay Type: <u>Bou</u> Depth (inche Remarks:	yer (if observe ulders	d):					Hydric Soil Present?	Yes O No O
Restrictive Lay Type: <u>Bou</u> Depth (inche Remarks:	yer (if observe ulders	d):					Hydric Soil Present?	Yes O No O
Restrictive Lay Type: <u>Bou</u> Depth (inche Remarks:	yer (if observe ulders	d):					Hydric Soil Present?	Yes No 🖲
Restrictive Lay Type: <u>Bou</u> Depth (inche Remarks:	yer (if observe ulders	d):					Hydric Soil Present?	Yes No 🖲
Restrictive Lay Type: <u>Bou</u> Depth (inche Remarks:	yer (if observe ulders	d):					Hydric Soil Present?	Yes O No O
Restrictive Lay Type: <u>Bou</u> Depth (inche Remarks:	yer (if observe ulders	d):					Hydric Soil Present?	Yes No 💿
Restrictive Lay Type: <u>Bou</u> Depth (inche Remarks:	yer (if observe ulders	d):					Hydric Soil Present?	Yes No 💿



AN18d Upland



AN18d Wetland

Project/Site: Antrim Wind Project	City/County	Antrim		Sampling Date: 17-Aug-11	
Applicant/Owner: Eolian Renewable Energy, LLC		State	: NH	Sampling Point:	AN18e Wetland
Investigator(s): AF JG	Section,	Township, Range: S	. т.	R.	
Landform (hillslope, terrace, etc.): Hillside	Local relief (concave, convex, no	ne): concave	Slope:	10.0 % / 5.7 °
Subregion (LRR or MLRA):	.:	Long.:		Da	tum:
Soil Map Unit Name:	-		NWI classif	ication: PFO	
	antly disturbed? ly problematic? g sampling	(If needed, ex	. ,	ers in Remarks.)	
Hydrophytic Vegetation Present?YesNoHydric Soil Present?YesNoWetland Hydrology Present?YesNo		ne Sampled Area iin a Wetland?	Yes 🖲 No C)	
Remarks: (Explain alternative procedures here or in a separate re Isolated PFO adjacent to Stream AN17.	eport.)				

Wetland Hydrology Indicators:	Secondary Indicators (minimum of 2 required)			
Primary Indicators (minimum of one required;	Surface Soil Cracks (B6)			
Surface Water (A1)	Surface Water (A1) Water-Stained Leaves (B9)			
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)		
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)		
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)		
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)		
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)		
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)		
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)		
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)		
Sparsely Vegetated Concave Surface (B8)		✓ FAC-neutral Test (D5)		
Field Observations:				
Surface Water Present? Yes O No 🖲	Depth (inches):			
Water Table Present? Yes O No 🖲	Depth (inches):			
Saturation Present? Yes • No ·	Wetland Hyc Depth (inches): 0	irology Present? Yes 🖲 No 🔿		
Describe Recorded Data (stream gauge, monito	ring well, aerial photos, previous inspections), if ava	ilable:		
Remarks:				

VEGETATION Ose scientific harnes of pla	111.5	Dominant Species?		Sampling Point: AN18e Wetland			
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:			
				Number of Dominant Species			
1. Fraxinus pennsylvanica	15		FACW	That are OBL, FACW, or FAC:6 (A)			
2. Acer rubrum	20	40.0%	FAC	Total Number of Dominant			
3. Betula alleghaniensis	15	30.0%	FAC	Species Across All Strata: 6 (B)			
4		0.0%					
5	0	0.0%		Percent of dominant Species That Are OBL, FACW, or FAC:100.0% (A/B)			
6		0.0%					
7	0	0.0%		Prevalence Index worksheet:			
Sapling/Shrub Stratum (Plot size: 15')	50	= Total Cove	r	Total % Cover of: Multiply by:			
1. Betula alleghaniensis	50	100.0%	FAC	OBL species $0 \times 1 = 0$			
2		0.0%		FACW species <u>136</u> x 2 = <u>272</u>			
3.	0	0.0%		FAC species x 3 =255			
Λ	0	0.0%		FACU species $0 \times 4 = 0$			
4	0	0.0%		UPL species $0 \times 5 = 0$			
5	•			Column Totals: 221 (A) 527 (B)			
6		0.0%					
7	0 50	0.0% = Total Cove		Prevalence Index = B/A = 2.385			
Herb Stratum (Plot size: 5')				Hydrophytic Vegetation Indicators:			
1.Osmunda cinnamomea	33	27.3%	FACW	Rapid Test for Hydrophytic Vegetation			
2. Onoclea sensibilis	33	27.3%	FACW	✓ Dominance Test is > 50%			
3.Eupatoriadelphus dubius	20	16.5%	FACW	✓ Prevalence Index is ≤3.0 1			
1 Immediane concercie		16.5%	FACW	Morphological Adaptations ¹ (Provide supporting			
E o u vicu		12.4%	FACW	data in Remarks or on a separate sheet)			
6.		0.0%	TACW	Problematic Hydrophytic Vegetation ¹ (Explain)			
7.	0			¹ Indicators of hydric soil and wetland hydrology must			
	0	0.0%		be present, unless disturbed or problematic.			
8		0.0%		Definitions of Vegetation Strata:			
9	0	0.0%		bennitions of vegetation strata.			
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter			
11	0	0.0%		at breast height (DBH), regardless of height.			
12	0	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and			
Woody Vine Stratum (Plot size:)	121	= Total Cove	r	greater than 3.28 ft (1m) tall.			
	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of			
2.	0	0.0%		size, and woody plants less than 3.28 ft tall.			
3	0	0.0%		Weady using All weady using greater than 2.20 ft in			
Δ	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in height.			
	0	= Total Cove	r				
				Hydrophytic Vegetation			
				Present? Yes No			
Remarks: (Include photo numbers here or on a separate she	eet.)						

Depth	ription: (De	Matrix	the depth	needed to		t the indic dox Featu		onfirm the	absence of indicators.)		
(inches)	Color (%	Color (~ %		Loc ²	Texture	Remarks	
0-8	10YR	2/1	100%						Muck		
8-11	2.5Y	4/1	75%	10YR	4/6	25%	С	М	mucky sand		
11-13	10YR	3/2							Sandy Loam		
										·	
										·	
										·	
					- <u> </u>						
¹ Type: C=Co	ncentration. D	=Depletio	n. RM=Red	uced Matrix,	CS=Cover	ed or Coate	ed Sand Gra	ains ² Loc	ation: PL=Pore Lining. M=N	/atrix	
	Indicators:								Indicators for Probl	ematic Hydric Soils : ³	
Histosol					value Belo A 149B)	w Surface ((S8) (LRR F	R,	2 cm Muck (A10)	(LRR K, L, MLRA 149B)	
_	ipedon (A2)					ace (S9) (I		2A 149R)	Coast Prairie Rede	ox (A16) (LRR K, L, R)	
Black His						Mineral (F1			5 cm Mucky Peat	or Peat (S3) (LRR K, L, R)	
	n Sulfide (A4) I Layers (A5)					Matrix (F2)			Dark Surface (S7)	(LRR K, L)	
	Below Dark S	Surfaco (A	11)		leted Matri				Polyvalue Below Surface (S8) (LRR K, L)		
	rk Surface (A			Redox Dark Surface (F6)					☐ Thin Dark Surface (S9) (LRR K, L) ☐ Iron-Manganese Masses (F12) (LRR K, L, R)		
_	uck Mineral (S			Depleted Dark Surface (F7)							
_	leyed Matrix (Red	ox Depres	sions (F8)			 Piedmont Floodplain Soils (F19) (MLRA 149B) Mesic Spodic (TA6) (MLRA 144A, 145, 149B) 		
_	edox (S5)	51)									
	Matrix (S6)								Red Parent Mater		
_	face (S7) (LRI	r R, MLRA	A 149B)						Other (Explain in		
³ Indicators (of hydrophytic	vegetatio	n and wetla	nd hydrology	/ must he	nresent un	less disturk	ed or prob		Kemarks)	
				ina nyarologj	must be	present, un					
	Layer (if obs	erved):									
Type:									Hydric Soil Present?	Yes $oldsymbol{eta}$ No $igodoldsymbol{eta}$	
Depth (in	ches):										
Remarks:											

Project/Site: Antrim Wind Project		City/County: Antrim	Sampling Date: 17-Aug-11		
Applicant/Owner: Eolian Renewable E	nergy, LLC	Sta	ate: NH	Sampling Point:	AN18e upland
Investigator(s): AF JG		Section, Township, Range:	S. T.	R.	
Landform (hillslope, terrace, etc.):	Hillside	Local relief (concave, convex, i	none): convex	Slope:	15.0 % / 8.5°
Subregion (LRR or MLRA):	Lat.:	Lon	g.:	Dat	tum:
Soil Map Unit Name:			NWI classi	fication:	
Are climatic/hydrologic conditions of Are Vegetation , Soil Are Vegetation , Soil Summary of Findings - At	, or Hydrology Significant , or Hydrology naturally p	tly disturbed? Are "Norma problematic? (If needed,	(If no, explain ir) ا Circumstances" explain any answ ns, transects	present? Yes	
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes No Yes No Yes No No	Is the Sampled Area within a Wetland?	Yes 🔿 No 🖲		
Remarks: (Explain alternative prov Very Bouldery.	edures here or in a separate repo	rt.)			

Wetland Hydrology Indicators:	Secondary Indicators (minimum of 2 required)			
Primary Indicators (minimum of one required;	_ Surface Soil Cracks (B6)			
Surface Water (A1)	Surface Water (A1) Water-Stained Leaves (B9)			
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)		
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)		
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)		
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)		
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)		
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)		
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)		
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)		
Sparsely Vegetated Concave Surface (B8)		FAC-neutral Test (D5)		
Field Observations:				
Surface Water Present? Yes O No •	Depth (inches):			
Water Table Present? Yes O No O	Depth (inches):	rdroloay Present? Yes 🔿 No 🖲		
Saturation Present? (includes capillary fringe) Yes O No •	Depth (inches):	rdrology Present? Yes 🔾 No 🖲		
Describe Recorded Data (stream gauge, monit	oring well, aerial photos, previous inspections), if av	ailable:		
Remarks:				

VEGETATION OSC SCIENTING NUMES OF Plants				Sampling Point: AN18e upland		
	Absolute			Dominance Test worksheet:		
Tree Stratum (Plot size: <u>30'</u>)	% Cover		Status	Number of Dominant Species		
1. Fagus grandifolia	33	43.4%	FACU	That are OBL, FACW, or FAC: 2 (A)		
2. Tsuga canadensis	33	43.4%	FACU	Total Number of Dominant		
3. Betula papyrifera	10	13.2%	FACU	Species Across All Strata: 7 (B)		
4		0.0%				
5	0	0.0%		Percent of dominant Species That Are OBL_EACW_or_EAC·28.6% (A/B)		
6	0	0.0%		That Are OBL, FACW, or FAC:(A/B)		
7	0	0.0%		Prevalence Index worksheet:		
Sapling/Shrub Stratum (Plot size: 15')	76	= Total Cove	r	Total % Cover of: Multiply by:		
1. Fagus grandifolia	40	53.3%	FACU	$\begin{array}{ccc} \text{OBL speciles} & 0 & \text{x 1} = & 0 \\ \hline & 0 & \end{array}$		
2. Acer pensylvanicum	20	26.7%	FACU	FACW species $0 \times 2 = 0$		
3. Betula alleghaniensis	45	20.0%	FAC	FAC speci es $30 \times 3 = 90$		
4.		0.0%		FACU speci es 141 x 4 = 564		
5.	0	0.0%		UPL species $0 \times 5 = 0$		
C	0	0.0%		Column Totals: 171 (A) 654 (B)		
7	0	0.0%		·		
-		= Total Cove	r	Prevalence Index = B/A = <u>3.825</u>		
Herb Stratum (Plot size: 5')			-	Hydrophytic Vegetation Indicators:		
1. Thelypteris noveboracensis	15	75.0%	FAC	Rapid Test for Hydrophytic Vegetation		
2.Quercus rubra	5	25.0%	FACU-	Dominance Test is > 50%		
3.	0	0.0%		□ Prevalence Index is \leq 3.0 ¹		
4.	0	0.0%		Morphological Adaptations ¹ (Provide supporting		
5.	0	0.0%		data in Remarks or on a separate sheet)		
6.	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)		
7.				¹ Indicators of hydric soil and wetland hydrology must		
	0	0.0%		be present, unless disturbed or problematic.		
8	0	0.0%		Definitions of Vegetation Strata:		
9	0	0.0%				
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter		
11	0	0.0%		at breast height (DBH), regardless of height.		
12	0	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and		
Woody Vine Stratum (Plot size:)	20	= Total Cove	r	greater than 3.28 ft (1m) tall.		
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of		
2	0	0.0%		size, and woody plants less than 3.28 ft tall.		
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in		
4	0	0.0%		height.		
	0	= Total Cove	r			
				Hydrophytic Vegetation		
				Present? Yes No •		
Pomarka: (Include photo numbers here or on a concrete she	not)					
Remarks: (Include photo numbers here or on a separate she	el.)					

Depth		Matrix		needed to document the indicator or confirm the Redox Features	-	
(inches)	Color (n		%	Color (moist) % Type 1 Loc ²	Texture	Remarks
0-5	10YR	3/2	100%		Loam	
5-7	2.5Y	4/8	100%		Fine Sand	
7-16	10YR	4/3	100%		Fine Sandy Loam	
					-	
¹ Type: C=Con	centration. D=	=Depletio	n. RM=Redu	uced Matrix, CS=Covered or Coated Sand Grains ² Loc	ation: PL=Pore Lining. M=N	/atrix
Hydric Soil					ī	ematic Hydric Soils : ³
Histosol (Polyvalue Below Surface (S8) (LRR R,		(LRR K, L, MLRA 149B)
Histic Epi	pedon (A2)			MLRA 149B)		ox (A16) (LRR K, L, R)
Black His	tic (A3)			Thin Dark Surface (S9) (LRR R, MLRA 149B)		or Peat (S3) (LRR K, L, R)
	n Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)	Dark Surface (S7)	
	Layers (A5)			Loamy Gleyed Matrix (F2)		Surface (S8) (LRR K, L)
	Below Dark S		11)	Redox Dark Surface (F6)	Thin Dark Surface	e (S9) (LRR K, L)
_	k Surface (A1			Depleted Dark Surface (F7)	Iron-Manganese I	Masses (F12) (LRR K, L, R)
	uck Mineral (S			Redox Depressions (F8)	Piedmont Floodpl	ain Soils (F19) (MLRA 149B)
Sandy Ge	eyed Matrix (S	(4)				6) (MLRA 144A, 145, 149B)
	Matrix (S6)				Red Parent Mater	
	face (S7) (LRR	R. MLRA	149B)		Very Shallow Dar	
					Other (Explain in	Remarks)
			n and wettai	nd hydrology must be present, unless disturbed or prob		
Restrictive L		erved):				
Type: B					Hydric Soil Present?	Yes 🔿 No 🖲
Depth (inc	thes): 16					
Remarks:						
Spodosol						



AN18e Wetland



AN18e Upland

				0		
Project/Site: Antrim Wind Project		City/County: Antrim	City/County: Antrim		Sampling Date: 17-Aug-11	
Applicant/Owner: Eolian Renewable E	nergy, LLC		State: NH	Sampling Point:	AN18f wetland	
Investigator(s): AF JG		Section, Township, Rang	Section, Township, Range: S. T.			
Landform (hillslope, terrace, etc.):	Swale	Local relief (concave, conve	ex, none): convex	Slope:	5.0%/2.9	
Subregion (LRR or MLRA):	Lat	 : L	_ong.:	Da	tum:	
Soil Map Unit Name:			NWI classi	ification: PFO		
Are Vegetation , Soil Are Vegetation , Soil Summary of Findings - At	, or Hydrology 🗌 natural	ly problematic? (If neede	mal Circumstances" ed, explain any answ ions, transects	vers in Remarks.)		
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes No Yes No Yes No No 	Is the Sampled Are within a Wetland?	^{ea} Yes • No (\supset		
Remarks: (Explain alternative pro Isolated PFO adjacent to Stream A	•	• •	with old road bed.			

Wetland Hydrology Indicators:	Secondary Indicators (minimum of 2 required)					
Primary Indicators (minimum of one required;	Surface Soil Cracks (B6)					
Surface Water (A1)	✓ Water-Stained Leaves (B9)	✓ Drainage Patterns (B10)				
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)				
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)				
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)				
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)				
Drift deposits (B3)		Stunted or Stressed Plants (D1)				
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)				
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)				
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)				
Sparsely Vegetated Concave Surface (B8)		\checkmark FAC-neutral Test (D5)				
Field Observations:						
Surface Water Present? Yes • No O	Depth (inches):4					
Water Table Present? Yes O No O	Depth (inches):	drology Present? Yes 🖲 No 🔾				
Saturation Present? (includes capillary fringe) Yes • No	Wetland Hy Depth (inches): 0	drology Present? Yes $ullet$ No $igcup$				
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:						
Remarks:						

	11.5	Dominant Species?		Sampling Point: AN18f wetland
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
1. Betula alleghaniensis	33	✓ 100.0%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)
2.	0	0.0%		
3.		0.0%		Total Number of Dominant Species Across All Strata: 5 (B)
4	0	0.0%		Species Across All Strata: 5 (B)
5.	0	0.0%		Percent of dominant Species
6	0	0.0%		That Are OBL, FACW, or FAC:(A/B)
7		0.0%		Prevalence Index worksheet:
		= Total Cove		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15')			1	$\frac{1}{0\text{BL species}} = 0 \text{ x 1} = 0$
1. Betula alleghaniensis	25	55.6%	FAC	FACW species $43 \times 2 = 86$
2. Acer rubrum	10	22.2%	FAC	
3. Fraxinus pennsylvanica	10	22.2%	FACW	
4	0	0.0%		FACU Specilles $x 4 = 0$
5	0	0.0%		UPL species $x = x = x$
6	0	0.0%		Column Totals: <u>111</u> (A) <u>290</u> (B)
7	0	0.0%		Prevalence Index = $B/A = 2.613$
	45	= Total Cove	r	Hydrophytic Vegetation Indicators:
Herb Stratum (Plot size: 5')				Rapid Test for Hydrophytic Vegetation
1. Onoclea sensibilis	33	✓ 100.0%	FACW	\checkmark Dominance Test is > 50%
2	0	0.0%		✓ Prevalence Index is $\leq 3.0^{-1}$
3	0	0.0%		Morphological Adaptations ¹ (Provide supporting
4	0	0.0%		data in Remarks or on a separate sheet)
5	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6	0	0.0%		
7	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8	0	0.0%		
9	0	0.0%		Definitions of Vegetation Strata:
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0	0.0%		at breast height (DBH), regardless of height.
12	0	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)	33	= Total Cove	r	greater than 3.28 ft (1m) tall.
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0	0.0%		height.
	0	= Total Cove	r	
				Hydrophytic Vegetation
				Present? Yes No
Remarks: (Include photo numbers here or on a separate she	et.)			

(inches)		Matrix				dox Featu		- 1. 2	- T	-	
	Color (m		%	Color (moist)	%	Туре	Loc ²	Texture	Rem	arks
0-8	10YR	3/2	100%						Sandy Loam		
8-16	2.5Y	5/2	80%	10YR	4/6	20%	C	Μ	Gravelly Sand		
									. <u> </u>		
		 Depletion	 PM_Pedu			ed or Coate	d Sand Gr		ation: PL=Pore Lining. M=M	atriv	
lydric Soil I		Depletion	I. RW-Read	iceu Matrix,	CJ-COVE						3
Histosol (Dolu	aluo Polo	w Surface (מס (ו מס ר		Indicators for Proble	ematic Hydric	Soils: ³
_	pedon (A2)			MLR	A 149B)	w surrace (30) (LKK P	,	2 cm Muck (A10)		
Black Hist				🗌 Thin	Dark Surf	ace (S9) (L	RR R, MLR	RA 149B)	Coast Prairie Redo		
_	n Sulfide (A4)			🗌 Loar	ny Mucky	Mineral (F1)) LRR K, L)		5 cm Mucky Peat o		R K, L, R)
	Layers (A5)			🗌 Loar	ny Gleyed	Matrix (F2)			Dark Surface (S7)		
	Below Dark Su	Irface (A1	1)	Depl	eted Matri	ix (F3)			Polyvalue Below S		
	k Surface (A12			Redo	ox Dark Su	urface (F6)			Thin Dark Surface		
	uck Mineral (S1)					Surface (F	7)		Piedmont Floodpla		
	eyed Matrix (S4			Redo	ox Depres	sions (F8)			Mesic Spodic (TA6		
Sandy Re	edox (S5)								Red Parent Materia		143, 1470)
Stripped	Matrix (S6)								Very Shallow Dark)
Dark Surf	face (S7) (LRR	R, MLRA	149B)						Other (Explain in F		
³ Indicators o	f hydrophytic v	egetation	n and wetlar	nd hydrology	must be	present, un	less disturb	ed or probl			
	ayer (if obser							·			
Type:	ayer (ir obser	veu).									
Depth (inc	hes).								Hydric Soil Present?	Yes 🖲	No 🔾
Deptil (inc											
Remarks: Iluvial Soils											

Project/Site: Antrim Wind Project		City/County: Antrim		Sampling Date: 17-Aug-11		
Applicant/Owner: Eolian Renewable E	inergy, LLC		State: NH	Sampling Point:	AN18f Upland	
Investigator(s): AF JG		Section, Township, Rang	e: S. T.	R.		
Landform (hillslope, terrace, etc.):	Toeslope	Local relief (concave, conve	, none): convex	Slope:	10.0 % / 5.7 °	
Subregion (LRR or MLRA):	Lat.:	Lo	ong.:	Datum:		
Soil Map Unit Name:			NWI classi	fication:		
Are climatic/hydrologic conditions of Are Vegetation , Soil Are Vegetation , Soil Summary of Findings - At	, or Hydrology Significant	tly disturbed? Are "Norn problematic? (If neede	(If no, explain ir nal Circumstances" d, explain any answ ONS, transects	present? Yes		
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes ○ No ● Yes ○ No ● Yes ○ No ●	Is the Sampled Area within a Wetland?	Yes 🔿 No 🤆			
Remarks: (Explain alternative pro	ocedures here or in a separate repo	prt.)				

Secondary Indicators (minimum of 2 required)			
Secondary Indicators (minimum of 2 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)			
loav Present? Yes 🔿 No 🖲			
logy Present? Yes 🔾 No 🖲			
ble:			

	1113	Dominant Species?		Sampling Point: AN18f Upland
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
1. Acer rubrum	40	50.0%	FAC	Number of Dominant Species
		 ✓ 50.0% ✓ 50.0% 	FAC	That are OBL, FACW, or FAC: (A)
2. Fraxinus pennsylvanica		0.0%	FACW	Total Number of Dominant
3	0			Species Across All Strata: 6 (B)
4	0	0.0%		Percent of dominant Species
5	0	0.0%		That Are OBL, FACW, or FAC: 50.0% (A/B)
6	0	0.0%		
7	0	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	80	= Total Cove	r	Total % Cover of: Multiply by: OBL species 0 x 1 = 0
1. Ostrya virginiana	25	31.3%	FACU-	
2. Pinus strobus	10	12.5%	FACU	FACW species $40 \times 2 = 80$
3. Betula alleghaniensis		12.5%	FAC	FAC species $\frac{70}{100}$ x 3 = $\frac{210}{1000}$
4. Fagus grandifolia	45	18.8%	FACU	FACU species $\frac{70}{5}$ x 4 = $\frac{280}{5}$
5. Acer pensylvanicum	20	25.0%	FACU	UPL species $\frac{5}{25}$ x 5 = $\frac{25}{25}$
6.		0.0%		Column Totals: 185 (A) 595 (B)
7.		0.0%		Prevalence Index = $B/A = 3.216$
		= Total Cove	r	
Herb Stratum (Plot size: 5')				Hydrophytic Vegetation Indicators: Rapid Test for Hydrophytic Vegetation
1.Malanthemum canadense	20	80.0%	FAC-	
2.Polygonatum pubescens	5	20.0%	UPL	Dominance Test is > 50%
3.	0	0.0%		Prevalence Index is $\leq 3.0^{1}$
4.	0	0.0%		Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5.	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6.	0	0.0%		
7.	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must
8.	0	0.0%		be present, unless disturbed or problematic.
9.	0	0.0%		Definitions of Vegetation Strata:
10.	0	0.0%		
11.	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
12.	0	0.0%		
		= Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
Woody Vine Stratum (Plot size:)	0	0.0%		Harb All borbassous (non weady) planta, regardless of
1	0			Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
3	0	0.0%		
3 /		0.0%		Woody vine - All woody vines greater than 3.28 ft in height.
4				neight.
	0	= Total Cove	r	
				Hydrophytic
				Vegetation V O N O
				Present? Yes V NO 🛡
Remarks: (Include photo numbers here or on a separate she	eet.)			

Depth (inches)	• • • •	Matrix		Redox Features	- -	David
	Color (r		%	Color (moist) % Type 1 Loc ²		Remarks
0-8	10YR	3/2	100%		Fine Sandy Loam	
8-14	10YR	3/4	100%		Fine Sandy Loam	
Type: C=Cor	ncentration. D	=Depletio	n. RM=Rec	luced Matrix, CS=Covered or Coated Sand Grains ² Loca	ation: PL=Pore Lining. M=M	latrix
Hydric Soil	Indicators:				Indicators for Drobb	ematic Hydric Soils : ³
Histosol	(A1)			Polyvalue Below Surface (S8) (LRR R,		enatic riguite solis .
	ipedon (A2)			MLRA 149B)		(LRR K, L, MLRA 149B)
Black His				Thin Dark Surface (S9) (LRR R, MLRA 149B)		x (A16) (LRR K, L, R)
	n Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)		or Peat (S3) (LRR K, L, R)
Stratified	Layers (A5)			Loamy Gleyed Matrix (F2)	Dark Surface (S7)	
Depleted	Below Dark S	Surface (A	11)	Depleted Matrix (F3)	Thin Dark Surface	urface (S8) (LRR K, L)
	rk Surface (A1			Redox Dark Surface (F6)		(S9) (LRR K, L) Iasses (F12) (LRR K, L, R)
Sandy M	uck Mineral (S	51)		Depleted Dark Surface (F7)		in Soils (F19) (MLRA 149B)
	eyed Matrix (S			Redox Depressions (F8)) (MLRA 144A, 145, 149B)
	edox (S5)				Red Parent Materia	
	Matrix (S6)				Very Shallow Dark	
	face (S7) (LRF	r r, mlra	149B)		Other (Explain in F	
³ Indicators of	of bydronbytic	vegetatio	n and wat	and hydrology must be present, unless disturbed or probl		(emarks)
				and flydrology must be present, diffess disturbed of probl		
	ayer (if obs	erved):				
Type: B					Hydric Soil Present?	Yes 🔿 No 🖲
Depth (ind	ches): 14				Hyune son Fresent:	res C No C
Remarks:						



AN18f Wetland



AN18f Upland



AN18f Wetland

Project/Site: Antrim Wind Project	City/County:	Antrim			Sampling Date:	16-Aug-11	
Applicant/Owner: Eolian Renewable Energy, LLC		Sta	te: NH		Sampling Point:	an20 wet	tland
Investigator(s): AF JG	Section, T	ownship, Range:	S	т.	R.		
Landform (hillslope, terrace, etc.): Toeslope	Local relief (c	oncave, convex, n	none): co	ncave	Slope:	3.0%/	1.7 °
Subregion (LRR or MLRA): Lat.:		Long	g.:		Da	tum:	
Soil Map Unit Name:			NWI	classifi	ication: PEM		
	ntly disturbed? problematic? sampling p	•	explain an	y answe	ers in Remarks.)		etc.
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No		e Sampled Area n a Wetland?	Yes 🖲	No O			
Remarks: (Explain alternative procedures here or in a separate rep Isolated PEM entirely within ROW	ort.)						

Wetland Hydrology Indicators:	Secondary Indicators (minimum of 2 required)			
Primary Indicators (minimum of one required;	Surface Soil Cracks (B6)			
Surface Water (A1)	Drainage Patterns (B10)			
✓ High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)		
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)		
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)		
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)		
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)		
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)		
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aguitard (D3)		
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)		
Sparsely Vegetated Concave Surface (B8)		✓ FAC-neutral Test (D5)		
Field Observations:				
Surface Water Present? Yes O No •	Depth (inches):			
Water Table Present? Yes No	Depth (inches): 2	drology Present? Yes 🔍 No 🔾		
Saturation Present? (includes capillary fringe) Yes • No	Wetland Hy Depth (inches): 0	drology Present? Yes 💿 No 🔿		
	oring well, aerial photos, previous inspections), if av	ailable:		
Remarks:				

·		Dominant Species?		Sampling Point: an20 wetland
Tree Stratum (Plot size:)	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
 1	0	0.0%		Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)
2.		0.0%		
3.		0.0%		Total Number of Dominant Species Across All Strata: 2 (B)
4.	0	0.0%		Species Across All Strata: 2 (B)
5.		0.0%		Percent of dominant Species
6.		0.0%		That Are OBL, FACW, or FAC:100.0% (A/B)
7.		0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size:)		= Total Cover	·	Total % Cover of: Multiply by:
	0	0.0%		OBL species 10 x 1 = 10
1 2.	0			FACW species 103 x 2 = 206
		0.0%		FAC species $0 \times 3 = 0$
3		0.0%		FACU species $0 \times 4 = 0$
4		0.0%		UPL species $0 \times 5 = 0$
5	0	0.0%		Column Totals: 113 (A) 216 (B)
6		0.0%		
/		0.0%		Prevalence Index = B/A = 1.912
Herb Stratum (Plot size: 5')	0	= Total Cover	r	Hydrophytic Vegetation Indicators:
1.Onoclea sensibilis	45	39.8%	FACW	Rapid Test for Hydrophytic Vegetation
2. Impatiens capensis	10	8.8%	FACW	✓ Dominance Test is > 50%
3.0smunda cinnamomea	33	29.2%	FACW	✓ Prevalence Index is $\leq 3.0^{1}$
4.Carex crinita	10	8.8%	OBL	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5. Phalaris arundinacea		13.3%	FACW+	Problematic Hydrophytic Vegetation ¹ (Explain)
6.	0	0.0%		
7.	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must
8.	0	0.0%		be present, unless disturbed or problematic.
9.	0	0.0%		Definitions of Vegetation Strata:
10.	0	0.0%		
11.	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
12.	0	0.0%		
		= Total Cover	·	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
Woody Vine Stratum (Plot size:)	0			Lieth All both seconds (non-woods) plants, reporting of
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
2	00	0.0%		
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4		-		height.
	0	= Total Cover	ſ	
				Hydrophytic Vegetation
				Present? Yes No
Remarks: (Include photo numbers here or on a separate she	eet.)			

Depth		Matrix				edox Featu	ures		absence of indicators.)	
(inches)	Color (%	Color	(moist)	~ %	Type 1	Loc ²	Texture	Remarks
0-8	10YR	3/2	100%						Loam	
8-11	2.5Y	4/2	95%	10YR	4/6	5%	С	М	Sandy Loam	
							_			
							_			
									· · · · · · · · · · · · · · · · · · ·	
1 Turney C. Co.										
¹ Type: C=Co		-Depietio	ni. Kivi=Ked	uceu Matrix,	US=COVE	eu or coate	eu sand Gr	anns -LOCa	ation: PL=Pore Lining. M=N	
Hydric Soil						0.5	(00) (105	-	Indicators for Prob	lematic Hydric Soils : ³
				□ Poly MLF	value Belc A 149B)	w Surface	(S8) (LRR I	२,	2 cm Muck (A10)	(LRR K, L, MLRA 149B)
	ipedon (A2)					face (S9) (LRR R. MLI	RA 149B)	Coast Prairie Red	ox (A16) (LRR K, L, R)
Black His						Mineral (F1			🗌 5 cm Mucky Peat	or Peat (S3) (LRR K, L, R)
	n Sulfide (A4)					Matrix (F2)		, ,	Dark Surface (S7) (LRR K, L)
_	I Layers (A5)	C	11)		leted Matr		/			Surface (S8) (LRR K, L)
	Below Dark		.11)			urface (F6)			Thin Dark Surface	e (S9) (LRR K, L)
_	rk Surface (A			_		Surface (F	7)		Iron-Manganese	Masses (F12) (LRR K, L, R)
_	uck Mineral (S				ox Depres		.,		Piedmont Floodpl	ain Soils (F19) (MLRA 149B)
_	leyed Matrix (<u>(</u> \$4)			on Bopios				Mesic Spodic (TA	6) (MLRA 144A, 145, 149B)
_	edox (S5)								Red Parent Mater	
	Matrix (S6)		1400)						Very Shallow Dar	k Surface (TF12)
	face (S7) (LR								Other (Explain in	Remarks)
³ Indicators of	of hydrophytic	c vegetatio	n and wetla	nd hydrolog	y must be	present, ur	nless disturl	bed or probl	lematic.	
Restrictive I	Layer (if obs	served):								
Type: b										
Depth (in									Hydric Soil Present?	Yes $ullet$ No $igodot$
Remarks:										
Remarks.										

Project/Site: Antrim Wind Project	City/County: Antrim		Sampling Date: 16-Aug-11						
Applicant/Owner: Eolian Renewable E	nergy, LLC		State: NH	Sampling Point:	an20 upland				
Investigator(s): AF JG		Section, Township, Ra	nge: S. T.	R.					
Landform (hillslope, terrace, etc.):	Hillside	Local relief (concave, conv	vex, none): convex	Slope:	15.0 % / 8.5°				
Subregion (LRR or MLRA):	Lat.:		Long.:	Datum:					
Soil Map Unit Name:			NWI classi	ification:					
Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.) Are Vegetation , soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No Are Vegetation , soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.									
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes O No O Yes No O Yes No O	Is the Sampled A within a Wetland		٥					
Remarks: (Explain alternative pro Maintained ROW	cedures here or in a separate repo	ort.)							

Wetland Hydrology Indicators:		
5 00	Secondary Indicators (minimum of 2 required)	
Primary Indicators (minimum of one required; c	Surface Soil Cracks (B6)	
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)		FAC-neutral Test (D5)
Field Observations:		
Surface Water Present? Yes O No O	Depth (inches):	
Water Table Present? Yes O No 🖲	Depth (inches):	
Saturation Present? (includes capillary fringe) Yes O No •	Wetland Hyd Depth (inches):	drology Present? YES 🔾 NO 🖲
Describe Recorded Data (stream gauge, monitor	ring well, aerial photos, previous inspections), if ava	ailable:
Remarks:		
 ☐ Inundation Visible on Aerial Imagery (B7) ☐ Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No ● Water Table Present? Yes No ● Saturation Present? Yes No ● Saturation Present? Yes No ● Describe Recorded Data (stream gauge, monitor 	Microtopographic Relief (D4) FAC-neutral Test (D5) Grology Present? Yes No	

		Dominant Species?		Sampling Point: an20 upland
Tree Stratum (Plot size:)	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
<u> </u>	0	0.0%		Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)
2.	0	0.0%		()
3.	0	0.0%		Total Number of Dominant Species Across All Strata: 2 (B)
4	0	0.0%		Species Across All Strata: 2 (B)
5		0.0%		Percent of dominant Species
6.		0.0%		That Are OBL, FACW, or FAC: 0.0% (A/B)
7		0.0%		Prevalence Index worksheet:
		= Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15')				$\frac{1}{0\text{BL species}} = 0 \text{ x 1} = 0$
1. Rhus copallinum	25	✔ 100.0%	NI	FACW species $0 \times 2 = 0$
2	0	0.0%		
3	0	0.0%		
4	0	0.0%		FACU species 10 x 4 = 40
5.		0.0%		UPL species $\frac{95}{1000}$ x 5 = $\frac{475}{10000}$
6.		0.0%		Column Totals: 105 (A) 515 (B)
7.	0	0.0%		Prevalence Index = $B/A = 4.905$
	25	= Total Cover		
Herb Stratum (Plot size: 5')				Hydrophytic Vegetation Indicators:
1.Dennstaedtia punctilobula	95	90.5%	UPL	Rapid Test for Hydrophytic Vegetation
2.Rubus alumnus	10	9.5%	FACU-	Dominance Test is > 50%
3.	0	0.0%		Prevalence Index is $\leq 3.0^{1}$
4.	0	0.0%		Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5.	0	0.0%		
6.	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
7.	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must
8.	0	0.0%		be present, unless disturbed or problematic.
9.	0	0.0%		Definitions of Vegetation Strata:
10.	0	0.0%		_
11.	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
12.	0	0.0%		at bleast height (DDH), regardless of height.
		= Total Cover		Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
Woody Vine Stratum (Plot size:)	0			
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
2	0			
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0	0.0%		height.
	0	= Total Cover		
				Hydrophytic Vegetation
				Present? Yes No •
Remarks: (Include photo numbers here or on a separate she	et.)			
• • • • • • • • • • • • • • • • • • •				

Depth	-	be to the depth trix	needed to document the indicator or confirm Redox Features	the absence of indicators.)	
(inches)	Color (mois	st) %	Color (moist) % Type 1 Lo	oc ² Texture	Remarks
0-5	10YR 3	3/2 100%		Fine Sandy Loam	_
5-10	10YR 4	4/4 100%		Fine Sandy Loam	
10-18	10YR 5	5/8 100%		Fine Sandy Loam	
			·		
			·		
			·		
			·		
			·		
1					
		pietion. KM=Rec	luced Matrix, CS=Covered or Coated Sand Grains	Location: PL=Pore Lining. M=	
<u> </u>	Indicators:			Indicators for Prob	lematic Hydric Soils : 3
Histosol			Polyvalue Below Surface (S8) (LRR R, MLRA 149B)	2 cm Muck (A10)	(LRR K, L, MLRA 149B)
	bipedon (A2)		Thin Dark Surface (S9) (LRR R, MLRA 149	B) Coast Prairie Rec	lox (A16) (LRR K, L, R)
Black His	stic (A3) en Sulfide (A4)		Loamy Mucky Mineral (F1) LRR K, L)	5 cm Mucky Peat	t or Peat (S3) (LRR K, L, R)
	d Layers (A5)		Loamy Gleyed Matrix (F2)	Dark Surface (S7	
	d Below Dark Surfa	re (A11)	Depleted Matrix (F3)		Surface (S8) (LRR K, L)
	ark Surface (A12)		Redox Dark Surface (F6)		e (S9) (LRR K, L)
	luck Mineral (S1)		Depleted Dark Surface (F7)		Masses (F12) (LRR K, L, R)
	leyed Matrix (S4)		Redox Depressions (F8)		lain Soils (F19) (MLRA 149B)
	edox (S5)			Red Parent Mate	.6) (MLRA 144A, 145, 149B)
	Matrix (S6)			Very Shallow Dar	. ,
Dark Su	rface (S7) (LRR R,	MLRA 149B)		Other (Explain in	
³ Indicators	of hydrophytic yea	etation and wetl	and hydrology must be present, unless disturbed or		Kennarksy
	Layer (if observe	ed):			
Type:	1			Hydric Soil Present?	Yes 🔿 No 🖲
Depth (in	ches):				
Remarks:					



AN20 Wetland



AN20 Upland

Project/Site: Antrim Wind Project	City/County:	Antrim			Sampling Date: 1	16-Aug-11	
Applicant/Owner: Eolian Renewable Energy, LLC		Sta	ite: NH		Sampling Point:	an21 wet	land
Investigator(s): AF JG	Section, T	ownship, Range:	S .	Т.	R.		
Landform (hillslope, terrace, etc.): Toeslope	Local relief (c	oncave, convex, n	none): (concave	Slope:	3.0 % /	1.7 °
Subregion (LRR or MLRA): Lat.:		Long	g.:		Da	tum:	
Soil Map Unit Name:			NV	VI classifi	cation: PEM		
	ntly disturbed? problematic? sampling p	•	explain a	iny answe	ers in Remarks.)		etc.
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No		e Sampled Area n a Wetland?	Yes 🤇	● No ○			
Remarks: (Explain alternative procedures here or in a separate rep Isolated PEM entirely within ROW	ort.)						

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)	
Primary Indicators (minimum of one required;	check all that apply)	Surface Soil Cracks (B6)	
Surface Water (A1)	Surface Water (A1) Water-Stained Leaves (B9)		
✓ High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)	
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)	
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)	
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)	
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)	
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)	
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)	
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)	
Sparsely Vegetated Concave Surface (B8)		FAC-neutral Test (D5)	
Field Observations:			
Surface Water Present? Yes O No •	Depth (inches):		
Water Table Present? Yes No	Depth (inches): <u>3</u>	drology Present? Yes 🖲 No 🔾	
Saturation Present? (includes capillary fringe) Yes • No	Wetland Hy Depth (inches): 0	drology Present? Yes 💿 No 🔿	
	oring well, aerial photos, previous inspections), if av	ailable:	
Remarks:			

		Dominant Species?		Sampling Point: an21 wetland
Tree Stratum (Plot size:)	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
<u> </u>	0	0.0%		Number of Dominant Species That are OBL, FACW, or FAC: 5
0	0	0.0%		
		0.0%		Total Number of Dominant
3	0			Species Across All Strata: 5 (B)
4		0.0%		Percent of dominant Species
5		0.0%		That Are OBL, FACW, or FAC: 100.0% (A/B)
6		0.0%		
7	0	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	0	= Total Cove	r	Total % Cover of: Multiply by: 0BL speci es 75 x 1 = 75
1. Spiraea tomentosa	5	33.3%	FACW	
2. Acer rubrum	5	33.3%	FAC	
3. Spiraea alba	5	33.3%	FACW+	FAC species $5 \times 3 = 15$
4.		0.0%		FACU species $0 \times 4 = 0$
5.		0.0%		UPL species $0 \times 5 = 0$
6.	0	0.0%		Column Totals: 124 (A) 178 (B)
7	0	0.0%		
		= Total Cove	r	Prevalence Index = B/A = <u>1.435</u> Hydrophytic Vegetation Indicators:
Herb Stratum (Plot size: 5')				Rapid Test for Hydrophytic Vegetation
1.Osmunda cinnamomea	5	4.6%	FACW	
2.Scirpus cyperinus	8	7.3%	FACW+	Dominance Test is > 50%
3. Carex scoparia	1	0.9%	FACW	✓ Prevalence Index is $\leq 3.0^{1}$
4. Carex crinita	50	45.9%	OBL	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5. Onoclea sensibilis		18.3%	FACW	
6.Equisetum fluviatile		22.9%	OBL	Problematic Hydrophytic Vegetation ¹ (Explain)
7.	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must
8.				be present, unless disturbed or problematic.
9.	0	0.0%		Definitions of Vegetation Strata:
	0	0.0%		
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0	0.0%		at breast height (DBH), regardless of height.
12	0	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)	109	= Total Cove	r	greater than 3.28 ft (1m) tall.
	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		Weathering All weatherings greater than 2.29 ft in
Δ	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in height.
T		= Total Cove		
	0	= Total Cove	ſ	
				Hydrophytic Vegetation
				Present? Yes \bigcirc No \bigcirc
Remarks: (Include photo numbers here or on a separate she	et)			•
Remarks. (Include proto numbers here or on a separate she	ei.)			

(inches)		Matrix		-		dox Featu			···		
	Color (I	moist)	%	Color	(moist)	%	Type 1	Loc ²	Texture	Remark	۲.S
0-9	10YR	3/2	100%						Loam		
9-14	2.5Y	4/2	95%	10YR	4/6	5%	С	Μ	Fine Sandy Loam		
									-		
									<u>.</u>		
Type: C=Con	centration. D	=Depletio	n. RM=Red	uced Matrix,	CS=Cover	ed or Coate	ed Sand Gr	ains ² Loca	ation: PL=Pore Lining. M=N	latrix	
Hydric Soil I	ndicators:								Indicators for Probl	ematic Hydric So	oils: ³
Histosol (A	A1)			🗌 Poly	value Belo	w Surface ((S8) (LRR F	ξ ,	2 cm Muck (A10)		
	pedon (A2)			_	A 149B)					ox (A16) (LRR K, L,	
Black Hist	tic (A3)			_		face (S9) (l				or Peat (S3) (LRR	
	Sulfide (A4)					Mineral (F1)			Dark Surface (S7)		
	Layers (A5)					Matrix (F2)				Surface (S8) (LRR K	(, L)
	Below Dark S		11)		leted Matr	urface (F6)			Thin Dark Surface		
	k Surface (A			_		Surface (F6)	7)		Iron-Manganese I	Masses (F12) (LRR	K, L, R)
	ick Mineral (S						/)		Piedmont Floodpl	ain Soils (F19) (MLI	RA 149B)
_	eyed Matrix (S4)			ox Depres	SIONS (F8)			Mesic Spodic (TA	5) (MLRA 144A, 14	5, 149B)
Sandy Re									Red Parent Mater	ial (TF2)	
	Matrix (S6)								Very Shallow Darl	Surface (TF12)	
Dark Surfa	ace (S7) (LRI	r r, mlra	149B)						Other (Explain in	Remarks)	
³ Indicators of	f hydrophytic	vegetatio	n and wetla	nd hydrolog	y must be	present, un	less disturk	ed or probl	ematic.		
mulcaturs 0		n									
	ayer (if obs	ervea):									
Restrictive L		erved):							Underla Call Dessault2	Yes 🔍 No	o O
Restrictive La Type: bc	oulders	erved):							Hydric Soil Present?	Yes 🗢 No	
Restrictive La Type: <u>bc</u> Depth (incl	oulders	erved):							Hydric Soli Present?	Yes 🔍 No	
Restrictive La Type: bc	oulders	erved):							Hydric Soil Present?	Yes S No	
Restrictive La Type: <u>bc</u> Depth (incl	oulders	erved):							Hyaric Soli Present?	Yes 🔍 No	<u>-</u>
Restrictive La Type: <u>bc</u> Depth (incl	oulders	erved):							Hyaric Soli Present?	Yes I No	
Restrictive La Type: <u>bc</u> Depth (incl	oulders	ervea):							Hyaric Soli Present?		-
Restrictive La Type: <u>bc</u> Depth (incl	oulders	ervea):							Hyaric Soli Present?		-
Restrictive La Type: <u>bc</u> Depth (incl	oulders	ervea):							Hyaric Soli Present?		-
Restrictive La Type: <u>bc</u> Depth (incl	oulders	erved):							Hyaric Soli Present?		-
Restrictive La Type: <u>bc</u> Depth (incl	oulders	erved):							Hyaric Soli Present?		-
Restrictive La Type: <u>bc</u> Depth (incl	oulders	erved):							Hyaric Soli Present?		-
Restrictive La Type: <u>bc</u> Depth (incl	oulders	erved):							Hyaric Soli Present?		
Restrictive La Type: <u>bc</u> Depth (incl	oulders	erved):							Hyaric Soli Present?		-
Restrictive La Type: <u>bc</u> Depth (incl	oulders	erved):							Hyaric Soli Present?		-
Restrictive La Type: <u>bc</u> Depth (incl	oulders	erved):							Hyaric Soli Present?		-
Restrictive La Type: <u>bc</u> Depth (incl	oulders	erved):							Hyaric Soli Present?		-
Restrictive La Type: <u>bc</u> Depth (incl	oulders	erved):							Hyaric Soli Present?		-
Restrictive La Type: <u>bc</u> Depth (incl	oulders	erved):							Hydric Soll Present?		
Restrictive La Type: <u>bc</u> Depth (incl	oulders	erved):							Hydric Soli Present?		-

Project/Site: Antrim Wind Project		City/County: Antrim			Sampling Date: 1	6-Aug-11
Applicant/Owner: Eolian Renewable E	nergy, LLC		State:	NH	Sampling Point:	an21 upland
Investigator(s): AF JG		Section, Township,	Range: S.	т.	R.	
Landform (hillslope, terrace, etc.):	Hillside	Local relief (concave, c	convex, non	e): convex	Slope:	18.0 % / 10.2
Subregion (LRR or MLRA):	Lat.:		Long.:		Dat	tum:
Soil Map Unit Name:		-	_	NWI classi	fication:	-
Are climatic/hydrologic conditions of Are Vegetation , Soil Are Vegetation , Soil Summary of Findings - At	, or Hydrology Significant , or Hydrology naturally p	tly disturbed? Are	"Normal Cin		present? Yes	
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes O No O Yes No O Yes No O	Is the Sample within a Wetla		Yes 🔿 No 🖲)	
Remarks: (Explain alternative pro Maintained ROW	cedures here or in a separate repo	rt.)				

	Secondary Indicators (minimum of 2 required)
check all that apply)	Surface Soil Cracks (B6)
Water-Stained Leaves (B9)	Drainage Patterns (B10)
Aquatic Fauna (B13)	Moss Trim Lines (B16)
Marl Deposits (B15)	Dry Season Water Table (C2)
Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)
Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)
Thin Muck Surface (C7)	Shallow Aquitard (D3)
	Microtopographic Relief (D4)
	FAC-neutral Test (D5)
Depth (inches):	
Depth (inches):	rdrology Present? Yes 🔿 No 🖲
Wetland Hy Depth (inches):	rdrology Present? Yes 🔾 No 🖲
pring well, aerial photos, previous inspections), if av	ailable:
	Aquatic Fauna (B13) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Thin Muck Surface (C7) Other (Explain in Remarks) Depth (inches): Depth (inches): Uepth (inches):

		Dominant Species?		Sampling Point: an21 upland
Tree Stratum (Plot size:)	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
1	0	0.0%		Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)
2	0	0.0%		
3.	0	0.0%		Total Number of Dominant Species Across All Strata: 6 (B)
4	0	0.0%		
5.	0	0.0%		Percent of dominant Species
6.		0.0%		That Are OBL, FACW, or FAC: <u>16.7%</u> (A/B)
7		0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')		= Total Cove	-	Total % Cover of: Multiply by:
1. Acer rubrum	5	20.0%	FAC	OBL species $0 \times 1 = 0$
	5	20.0%	FACU	FACW species $0 \times 2 = 0$
2	5	20.0%	FACU-	FAC species8 x 3 =24
A		20.0%	FACU	FACU species x 4 =112
		✓ 20.0%✓ 20.0%	FACU-	UPL species $\frac{95}{1000} \times 5 = \frac{475}{1000}$
		0.0%	FACU-	Column Totals: 131 (A) 611 (B)
	0	0.0%		
7	-			Prevalence Index = B/A = 4.664
Herb Stratum (Plot size: 5')	25	= Total Cove	Ē	Hydrophytic Vegetation Indicators:
1 Demostra dalla munatilativata	95	✔ 89.6%	UPL	Rapid Test for Hydrophytic Vegetation
2 Triantalla haraalla	3	2.8%	FAC	Dominance Test is > 50%
	8	7.5%	FACU	□ Prevalence Index is \leq 3.0 ¹
4.	0	0.0%	TACU	Morphological Adaptations ¹ (Provide supporting
5.	0	0.0%		data in Remarks or on a separate sheet)
6.				Problematic Hydrophytic Vegetation ¹ (Explain)
7.	0			¹ Indicators of hydric soil and wetland hydrology must
8.	0			be present, unless disturbed or problematic.
9.	0			Definitions of Vegetation Strata:
10.	0			
11.	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
12.	0	0.0%		at breast height (DBH), regardless of height.
	0 106	= Total Cover	 r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
Woody Vine Stratum (Plot size:)	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
0	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		
Δ	0	0.0%	-	Woody vine - All woody vines greater than 3.28 ft in height.
т. <u> </u>		= Total Cove		l sign
				Hydrophytic
				Vegetation Present? Yes O No •
				Present? 105 C No C
				1
Remarks: (Include photo numbers here or on a separate she	et.)			

	•		lepth needed to document the ind		absence of indicators.)	
Depth (inches)	M Color (mo	atrix	Redox Fea Color (moist) %		Texture	Remarks
0-4	10YR	3/2 100			Fine Sandy Loam	Remarks
4-9	10YR	4/6 100	%		Fine Sandy Loam	
					·,	
					<u>.</u>	
					·,	
					,	
					. <u> </u>	
¹ Type: C=Cor	ncentration. D=D	epletion. RN	=Reduced Matrix, CS=Covered or Co	ated Sand Grains ² Loca	ation: PL=Pore Lining. M=M	atrix
Hydric Soil	Indicators:				Indicators for Proble	ematic Hydric Soils : ³
Histosol	(A1)		Polyvalue Below Surfac	e (S8) (LRR R,	_	(LRR K, L, MLRA 149B)
🗌 Histic Ep	ipedon (A2)		MLRA 149B)			x (A16) (LRR K, L, R)
Black His	stic (A3)		Thin Dark Surface (S9)	(LRR R, MLRA 149B)		or Peat (S3) (LRR K, L, R)
Hydroge	n Sulfide (A4)		Loamy Mucky Mineral (
Stratified	l Layers (A5)		Loamy Gleyed Matrix (F2)	Dark Surface (S7)	
	Below Dark Sur	face (A11)	Depleted Matrix (F3)			urface (S8) (LRR K, L)
	rk Surface (A12)		Redox Dark Surface (Fe	6)	Thin Dark Surface	
	uck Mineral (S1)		Depleted Dark Surface	(F7)		lasses (F12) (LRR K, L, R)
	leyed Matrix (S4)		Redox Depressions (F8)		in Soils (F19) (MLRA 149B)
_	edox (S5)) (MLRA 144A, 145, 149B)
_	Matrix (S6)				Red Parent Materia	
	face (S7) (LRR R		2)		Very Shallow Dark	
					Other (Explain in F	Remarks)
³ Indicators of	of hydrophytic ve	getation and	wetland hydrology must be present,	unless disturbed or proble	ematic.	
Restrictive L	ayer (if observ	/ed):				
Туре:						
Depth (ind	ches):				Hydric Soil Present?	Yes 🔿 No 🖲
Remarks:						
Remarks.						
1						
1						



AN21 Wetland



AN21 Upland

Project/Site: Antrim Wind Project		City/County:	Antrim				Sampling Date: 1	7-Aug-11	
Applicant/Owner: Eolian Renewable E	nergy, LLC		St	ate:	NH		Sampling Point:	an22 we	tland
Investigator(s): AF JG		Section, T	ownship, Range	: S .		т.	R.		
Landform (hillslope, terrace, etc.):	Hillside	Local relief (c	oncave, convex,	none)	: flat	-	Slope:	5.0 % /	2.9 °
Subregion (LRR or MLRA):	Lat.:		Lor	ng.:			Dat	um:	
Soil Map Unit Name:		-			NWI cla	ssifi	cation: PSS		
Are climatic/hydrologic conditions of Are Vegetation , Soil Are Vegetation , Soil Summary of Findings - At	, or Hydrology Significant , or Hydrology naturally p	tly disturbed? problematic?	-	al Circ , expla	umstance ain any ar	es" pi nswe	rs in Remarks.)		etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes No ○ Yes No ○ Yes No ○ Yes No ○		e Sampled Area n a Wetland?	Y	es 🖲 No	, O			
Remarks: (Explain alternative pro Isolated PSS with moose wallow c		rt.)							

Wetland Hydrology Indicators:	Secondary Indicators (minimum of 2 required)				
Primary Indicators (minimum of one required;	Surface Soil Cracks (B6)				
Surface Water (A1)	✓ Water-Stained Leaves (B9)	Drainage Patterns (B10)			
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)			
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)			
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)			
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)			
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)			
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)			
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)			
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)			
Sparsely Vegetated Concave Surface (B8)		FAC-neutral Test (D5)			
		_ 、 ,			
Field Observations:					
Surface Water Present? Yes O No O	Depth (inches):				
Water Table Present? Yes O No O	Depth (inches):				
Saturation Present? (includes capillary fringe) Yes • No	Wetland H	ydrology Present? Yes 🖲 No 🔾			
Describe Recorded Data (stream gauge, monit	oring well, aerial photos, previous inspections), if a	vailable:			
Remarks:					

VEGETATION - Use scientific names of plan	nts	Dominant Species?		Sampling Point: an22 wetland				
Tree Stratum (Plot size:)	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:				
			Status	Number of Dominant Species				
1	0	0.0%		That are OBL, FACW, or FAC: (A)				
2	0	0.0%		Total Number of Dominant				
3		0.0%		Species Across All Strata: (B)				
4	0			Percent of dominant Species				
5		0.0%		That Are OBL, FACW, or FAC: 100.0% (A/B)				
6		0.0%		-				
7				Prevalence Index worksheet:				
Sapling/Shrub Stratum (Plot size: 15')	0	= Total Cover	ſ	Total % Cover of: Multiply by: OBL species 8 x 1 = 8				
1. Fraxinus pennsylvanica	10	20.8%	FACW	FACW species $55 \times 2 = 110$				
2. Acer rubrum	25	52.1%	FAC					
3. Spiraea tomentosa	5	10.4%	FACW					
4. Viburnum lentago	8	16.7%	FAC	$\frac{1}{2} x 4 = -\frac{1}{2}$				
5	0	0.0%		UPL species x 5 =				
6	0	0.0%		Column Totals: (A) (B)				
7	0	0.0%		Prevalence Index = $B/A = 2.283$				
Herb Stratum (Plot size: 5')	48	= Total Cover	-	Hydrophytic Vegetation Indicators:				
Herb Stratum (Plot size: 5)				Rapid Test for Hydrophytic Vegetation				
1. Onoclea sensibilis	25	49.0%	FACW	✓ Dominance Test is > 50%				
2.0smunda cinnamomea	15	29.4%	FACW	✓ Prevalence Index is $\leq 3.0^{1}$				
3.Carex crinita	8		OBL	Morphological Adaptations ¹ (Provide supporting				
4.Equisetum arvense	3	5.9%	FAC	data in Remarks or on a separate sheet)				
5	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)				
6	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
7	0	0.0%						
8	0	0.0%						
9	0	0.0%		Definitions of Vegetation Strata:				
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter				
11	0	0.0%		at breast height (DBH), regardless of height.				
12	0	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and				
Woody Vine Stratum (Plot size:)	51	= Total Cover	r	greater than 3.28 ft (1m) tall.				
,,,	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of				
2	0	0.0%		size, and woody plants less than 3.28 ft tall.				
3	0	0.0%		Weady vine All weady vince greater than 2.29 ft in				
4	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in height.				
	0	= Total Cover	- <u> </u>	5				
				Hydrophytic				
				Vegetation Present? Yes No				
Remarks: (Include photo numbers here or on a separate she	et.)							
remarks. (monare proto nambers here or on a separate she								

_

	ription: (De		the depth	needed to				onfirm the	absence of indicators.)	
Depth (inches)	- Color (Matrix moist)	- %	Color	Re (moist)	dox Featu		Loc ²	Texture	Remarks
0-8	10YR	3/2	100%	000	moisty		Туре		Loam	Remarks
8-15	2.5Y	4/2	90%	10YR	5/8	10%	C	М	Fine Sandy Loam	
				·						
¹ Type: C=Cor	ncentration. D	- Depletio	n. RM=Rec	luced Matrix.	CS=Cover	ed or Coate	d Sand Gra	ains ² Loc	ation: PL=Pore Lining. M=N	 Natrix
Hydric Soil				,						
Histosol				Poly	value Belo	w Surface (S8) (LRR F	2,	_	ematic Hydric Soils : ³
	ipedon (A2)				RA 149B)					(LRR K, L, MLRA 149B)
Black His				L Thir	n Dark Surf	ace (S9) (l	.RR R, MLF	RA 149B)		ox (A16) (LRR K, L, R)
	n Sulfide (A4)			Loa	my Mucky	Mineral (F1) LRR K, L)		Dark Surface (S7)	or Peat (S3) (LRR K, L, R)
Stratified	Layers (A5)					Matrix (F2)				Surface (S8) (LRR K, L)
Depleted	Below Dark S	Surface (A	11)		leted Matri				Thin Dark Surface	
Thick Da	rk Surface (A	12)		_	ox Dark Su					Masses (F12) (LRR K, L, R)
Sandy M	uck Mineral (S	S1)				Surface (F	7)			ain Soils (F19) (MLRA 149B)
Sandy GI	eyed Matrix (S4)			ox Depres	sions (F8)				6) (MLRA 144A, 145, 149B)
Sandy Re									Red Parent Mater	
	Matrix (S6)								Very Shallow Dar	< Surface (TF12)
Dark Sur	face (S7) (LR	r r, mlra	(149B)						Other (Explain in	Remarks)
³ Indicators of	of hydrophytic	vegetatio	n and wetla	and hydrolog	y must be	present, un	less disturb	ed or probl	lematic.	
Restrictive L	_ayer (if obs	erved):								
Type: s	tony									
Depth (ind									Hydric Soil Present?	Yes 🔍 No 🔾
Remarks:										
riomanio										

Subregion (LRR or MLRA): Lat.: Long.: Datum: Soil Map Unit Name: NWI classification: NWI classification: Are climatic/hydrologic conditions on the site typical for this time of year? Yes	Project/Site: Antrim Wind Project		City/County: Antrim		Sampling Date: 1	7-Aug-11	
Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): flat Slope: 12.0 % / 6 Subregion (LRR or MLRA): Lat.: Long.: Datum: Soil Map Unit Name: NWI classification: Are climatic/hydrologic conditions on the site typical for this time of year? Yes Image: NWI classification: Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc Hydrophytic Vegetation Present? Yes No Is the Sampled Area within a Wetland? Yes No Is the Sampled Area within a Wetland? Yes No	Applicant/Owner: Eolian Renewable E	nergy, LLC	Sta	ate: NH	Sampling Point:	AN22 Up	land
Subregion (LRR or MLRA): Lat.: Long.: Datum: Soil Map Unit Name: NWI classification: NWI classification: Are climatic/hydrologic conditions on the site typical for this time of year? Yes	Investigator(s): AF JG		Section, Township, Range:	S. T.	R.		
Soil Map Unit Name: NWI classification: Are climatic/hydrologic conditions on the site typical for this time of year? Yes	Landform (hillslope, terrace, etc.):	Hillside	Local relief (concave, convex, i	n one) : flat	Slope:	12.0 % /	6.8°
Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.) Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Yes No No Is the Sampled Area within a Wetland? Yes No Wetland?	Subregion (LRR or MLRA):	Lat.:	Lon	g.:	Dat	tum:	
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc Hydrophytic Vegetation Present? Yes No Is the Sampled Area within a Wetland? Yes No Is the Sampled Area	Soil Map Unit Name:			NWI classif	fication:		
Hydric Soil Present? Yes No No Is the Sampled Area within a Wetland? Yes No	Are Vegetation, Soil Are Vegetation, Soil	, or Hydrology Significant	tly disturbed? Are "Norma problematic? (If needed,	l Circumstances" explain any answ	present? Yes		ètc.
Wetland Hydrology Present? Yes O No 🔍	Hydrophytic Vegetation Present?		Is the Sampled Area				

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)
Primary Indicators (minimum of one required;	check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2)	 Oxidized Rhizospheres along Living Roots (C3) 	Saturation Visible on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aguitard (D3)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)		FAC-neutral Test (D5)
Field Observations:		
Surface Water Present? Yes O No 💿	Depth (inches):	
Water Table Present? Yes O No •	Depth (inches):	drology Present? Yes 🔿 No 🖲
Saturation Present? (includes capillary fringe) Yes O No O	Wetland Hyd Depth (inches):	drology Present? Yes 🔾 No 🖲
Describe Recorded Data (stream gauge, monit	oring well, aerial photos, previous inspections), if ava	ailable:
Remarks:		

		Dominant Species?		Sampling Point: AN22 Upland
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
				Number of Dominant Species
1. Tsuga canadensis	20	33.3%	FACU	That are OBL, FACW, or FAC: 1 (A)
2. Betula papyrifera		16.7%	FACU	Total Number of Dominant
3. Fagus grandifolia		33.3%	FACU	Species Across All Strata: 6 (B)
4. Acer rubrum		16.7%	FAC	Dereent of deminent Species
5	0	0.0%		Percent of dominant Species That Are OBL, FACW, or FAC:16.7% (A/B)
6	0	0.0%		
7	0	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	60	= Total Cove	r	Total % Cover of: Multiply by:
1. Betula alleghaniensis	25	✓ 50.0%	FAC	$\begin{array}{c} \text{OBL species} \qquad 0 \qquad \text{x 1} = 0 \\ \hline \end{array}$
2. Acer pensylvanicum		30.0%	FACU	FACW species $0 \times 2 = 0$
3. Fagus grandifolia		20.0%	FACU	FAC species 45 x 3 = 135
4.		0.0%		FACU species x 4 =
5	0	0.0%		UPL species $\frac{66}{x 5} = \frac{330}{x 5}$
5	0	0.0%		Column Totals: 201 (A) 825 (B)
6. 7.	0	0.0%		Prevalence Index = B/A = 4.104
		= Total Cove	r	
Herb Stratum (Plot size: 5')			•	Hydrophytic Vegetation Indicators:
1. Trientalis borealis	10	11.0%	FAC	Rapid Test for Hydrophytic Vegetation
2. Dennstaedtia punctilobula	66	72.5%	UPL	Dominance Test is > 50%
3.Aralia nudicaulis	15	16.5%	FACU	Prevalence Index is $\leq 3.0^{1}$
4.	0	0.0%		Morphological Adaptations ¹ (Provide supporting
5.		0.0%		data in Remarks or on a separate sheet)
6.	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
7		0.0%		¹ Indicators of hydric soil and wetland hydrology must
8.	0	0.0%		be present, unless disturbed or problematic.
9.	0	0.0%		Definitions of Vegetation Strata:
10.	0	0.0%		
11.	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
12.	0	0.0%		at bloast holght (BBH), regardloss of holght.
12.		= Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)	71			greater than 3.28 ft (1m) tall
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0	0.0%		height.
	0	= Total Cove	r	
				Hydrophytic
				Vegetation Present? Yes O No O
Pomarke: (Include photo numbers here or on a concrete a	hoot)			1
Remarks: (Include photo numbers here or on a separate s	neet.)			

Depth		Matrix		Redox Fea			
(inches)	Color (%	Color (moist) %	Type 1 Loc ²		Remarks
0-9	10YR	3/2	100%			Loam	
9-13	2.5Y	5/3	100%			Very Fine Sandy Loam	
							—
				· ·			
¹ Type: C=Co	ncentration. D	=Depletio	n. RM=Red	uced Matrix, CS=Covered or Co	ated Sand Grains ² Lc	cation: PL=Pore Lining. M=	=Matrix
Hydric Soil	Indicators:					Indicators for Pro	blematic Hydric Soils : ³
Histosol	(A1)			Polyvalue Below Surfac	e (S8) (LRR R,)) (LRR K, L, MLRA 149B)
Histic Ep	pipedon (A2)			MLRA 149B)	<i></i>		dox (A16) (LRR K, L, R)
Black Hi	stic (A3)			Thin Dark Surface (S9)			at or Peat (S3) (LRR K, L, R)
	en Sulfide (A4)			Loamy Mucky Mineral (Dark Surface (S	
	d Layers (A5)			Loamy Gleyed Matrix (I	-2)		/ Surface (S8) (LRR K, L)
	d Below Dark S		11)	Depleted Matrix (F3)			ce (S9) (LRR K, L)
_	ark Surface (A			Redox Dark Surface (Fe			e Masses (F12) (LRR K, L, R)
	luck Mineral (S			Depleted Dark Surface			plain Soils (F19) (MLRA 149B)
	leyed Matrix (S4)		Redox Depressions (F8)		A6) (MLRA 144A, 145, 149B)
	edox (S5)					Red Parent Mate	erial (TF2)
	Matrix (S6)					Very Shallow Da	ark Surface (TF12)
Dark Su	rface (S7) (LR	r r, mlra	(149B)			Other (Explain i	n Remarks)
³ Indicators	of hydrophytic	vegetatio	n and wetla	nd hydrology must be present,	unless disturbed or pro	blematic.	
Restrictive	Layer (if obs	erved):					
Type: k							
	ches): 13					Hydric Soil Present?	? Yes 🔾 No 🖲
	10						
Remarks:							



AN22 Wetland



AN22 Upland

			0	
Project/Site: Antrim Wind Project		City/County: Antrim	Sampling Date: 17-Aug-11	
Applicant/Owner: Eolian Renewable	Energy, LLC	State: NH	Sampling Point: AN23 Wetland	
Investigator(s): AF JG		Section, Township, Range: S. T.	R.	
Landform (hillslope, terrace, etc.):	Hillside	Local relief (concave, convex, none): concave	Slope : 12.0 % / 6.8 °	
Subregion (LRR or MLRA):	Lat.:	Long.:	Datum:	
Soil Map Unit Name:		NWI class	ification: PFO/PSS	
Are Vegetation , Soil Are Vegetation , Soil Summary of Findings - At	, or Hydrology naturally	tly disturbed? Are "Normal Circumstances" problematic? (If needed, explain any answ sampling point locations, transects	vers in Remarks.)	
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes ● No ○ Yes ● No ○ Yes ● No ○	Is the Sampled Area within a Wetland? Yes • No)	
Remarks: (Explain alternative pro Isolated PFO/PSS hillside seep dis	ocedures here or in a separate repo sturbed by Skidder activity.	ort.)		

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)		
Primary Indicators (minimum of one required;	check all that apply)	Surface Soil Cracks (B6)		
Surface Water (A1)				
High Water Table (A2)	Aquatic Fauna (B13)	Drainage Patterns (B10) Moss Trim Lines (B16)		
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)		
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)		
Sediment Deposits (B2)	 Oxidized Rhizospheres along Living Roots (C3) 	Saturation Visible on Aerial Imagery (C9)		
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)		
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)		
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)		
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)		
Sparsely Vegetated Concave Surface (B8)		FAC-neutral Test (D5)		
Field Observations:				
Surface Water Present? Yes O No O	Depth (inches):			
Water Table Present? Yes O No •	Depth (inches):			
Saturation Present? (includes capillary fringe) Yes • No	Depth (inches):0	/drology Present? Yes 🖲 No 🔾		
Describe Recorded Data (stream gauge, monited	pring well, aerial photos, previous inspections), if av	ailable:		
Remarks:				

	int5	Dominant Species?		Sampling Point: AN23 Wetland
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
1. Fraxinus pennsylvanica	33	40.7%	FACW	Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)
0 Assa milimum		40.7%	FAC	
	45	18.5%	FAC	Total Number of Dominant
4		0.0%	140	Species Across All Strata: 5 (B)
		0.0%		Percent of dominant Species
5				That Are OBL, FACW, or FAC:(A/B)
6	0	0.0%		
7		0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	81	= Total Cove	r	Total % Cover of: Multiply by:
1. Fraxinus pennsylvanica	8	28.6%	FACW	OBL species $5 \times 1 = 5$
2. Spiraea tomentosa	45	53.6%	FACW	FACW species <u>139</u> x 2 = <u>278</u>
		17.9%	FACU	FAC speci es 56 x 3 = 168
4		0.0%	1400	FACU species $5 \times 4 = 20$
E		0.0%		UPL species x 5 =
6				Column Totals: 205 (A) 471 (B)
7		0.0%		
1		0.0%		Prevalence Index = B/A = 2.298
Herb Stratum (Plot size: 5')	28	= Total Cove	r	Hydrophytic Vegetation Indicators:
1 a b b b b b b b b b b	75	78.1%	FACW	Rapid Test for Hydrophytic Vegetation
2.Osmunda cinnamomea	8	8.3%	FACW	✓ Dominance Test is > 50%
2 F		8.3%	FAC	✓ Prevalence Index is ≤3.0 1
4. Carex lurida			OBL	Morphological Adaptations ¹ (Provide supporting
F		5.2%	UBL	data in Remarks or on a separate sheet)
		0.0%		\Box Problematic Hydrophytic Vegetation ¹ (Explain)
6	0	0.0%		
7		0.0%		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8	0	0.0%		
9	0	0.0%		Definitions of Vegetation Strata:
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0	0.0%		at breast height (DBH), regardless of height.
12	0	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)	96	= Total Cove	r	greater than 3.28 ft (1m) tall.
	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4.	0	0.0%		height.
	0	= Total Cove	r	
				Hydrophytic
				Vegetation Present? Yes • No ·
Domarka, (Include photo numbers have as a commente sh	not)			1
Remarks: (Include photo numbers here or on a separate she	eet.)			

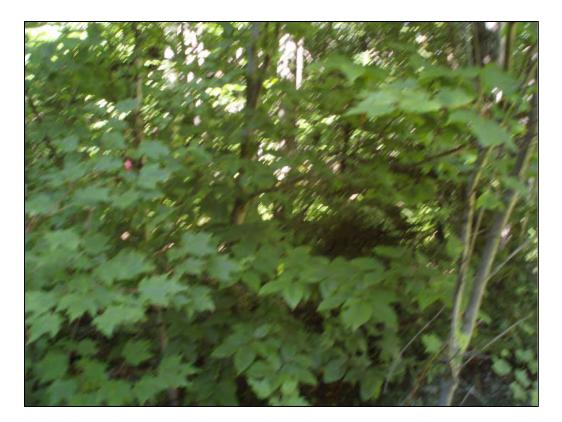
Depth		Matrix		needed to document the indicator or confirm Redox Features		
(inches)	Color (r		%	Color (moist) % Type 1 Lo		Remarks
0-7	10YR	3/2	100%		Loam	
7-15	2.5Y	4/1	100%		Sandy Loam	
¹ Type: C=Co	ncentration. D	=Depletio	n. RM=Red	uced Matrix, CS=Covered or Coated Sand Grains	Location: PL=Pore Lining. M=	 Matrix
	Indicators:					blematic Hydric Soils : ³
Histosol				Polyvalue Below Surface (S8) (LRR R,) (LRR K, L, MLRA 149B)
Histic Ep	pipedon (A2)			MLRA 149B)		dox (A16) (LRR K, L, R)
Black Hi	stic (A3)			Thin Dark Surface (S9) (LRR R, MLRA 149E	יי <u>ה</u>	t or Peat (S3) (LRR K, L, R)
	n Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)	Dark Surface (S	
_	d Layers (A5)			Loamy Gleyed Matrix (F2)		Surface (S8) (LRR K, L)
	d Below Dark S		11)	Redox Dark Surface (F6)	Thin Dark Surfac	e (S9) (LRR K, L)
_	ark Surface (A1			Depleted Dark Surface (F7)	Iron-Manganese	Masses (F12) (LRR K, L, R)
_	luck Mineral (S			Redox Depressions (F8)	Piedmont Flood	olain Soils (F19) (MLRA 149B)
_	leyed Matrix (S edox (S5)	54)		(, , , , , , , , , , , , , , , ,		A6) (MLRA 144A, 145, 149B)
	Matrix (S6)				Red Parent Mate	
	face (S7) (LRF	R. MIRA	149B)			rk Surface (TF12)
					Other (Explain ir	n Remarks)
			n and wetla	nd hydrology must be present, unless disturbed or p	problematic.	
	Layer (if obs	erved):				
Type: s					Hydric Soil Present?	Yes 💿 No 🔿
Depth (in	ches): 15				riyune Jon Present:	Tes S No C
Remarks:						

Project/Site: Antrim Wind Project		City/County: Antrim		Sampling Date: 1	7-Aug-11
Applicant/Owner: Eolian Renewable E	Energy, LLC	:	State: NH	Sampling Point:	an23 upland
Investigator(s): AF JG		Section, Township, Rang	je: S. T.	R.	
Landform (hillslope, terrace, etc.):	Hillside	Local relief (concave, conve	x, none): flat	Slope:	15.0 % / 8.5 °
Subregion (LRR or MLRA):	Lat.:	L	ong.:	Dai	tum:
Soil Map Unit Name:			NWI classi	fication:	
Are climatic/hydrologic conditions of Are Vegetation , Soil Are Vegetation , Soil Summary of Findings - At	, or Hydrology Significant	tly disturbed? Are "Norr problematic? (If neede	(If no, explain ir nal Circumstances" d, explain any answ ONS, transects	present? Yes	
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes ○ No ● Yes ○ No ● Yes ○ No ●	Is the Sampled Area within a Wetland?	a Yes 🔿 No 🤅	٥	
Remarks: (Explain alternative pro	ocedures here or in a separate repo	ort.)			

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)
Primary Indicators (minimum of one required;	check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)		FAC-neutral Test (D5)
Field Observations:		
Surface Water Present? Yes O No 🖲	Depth (inches):	
Water Table Present? Yes O No 💿	Depth (inches):	drology Present? Yes 🔿 No 🖲
Saturation Present? (includes capillary fringe) Yes O No O	Wetland Hyd Depth (inches):	drology Present? Yes 🔾 No 🖲
Describe Recorded Data (stream gauge, monitor	oring well, aerial photos, previous inspections), if ava	illable:
Remarks:		

Species?				Sampling Point: an23 upland			
Tree Stratum (Plot size: 30')	Absolute	Rel.Strat.	Indicator	Dominance Test worksheet:			
	% Cover		Status	Number of Dominant Species			
1. Quercus rubra	25	29.4%	FACU-	That are OBL, FACW, or FAC: 2 (A)			
2. Fagus grandifolia	25	29.4%	FACU	Total Number of Dominant			
3. Betula alleghaniensis	25	29.4%	FAC	Species Across All Strata: 6 (B)			
4. Tsuga canadensis		11.8%	FACU	Demonst of deminent Creation			
5	0	0.0%		Percent of dominant Species That Are OBL, FACW, or FAC:33.3% (A/B)			
6	0	0.0%					
7	0	0.0%		Prevalence Index worksheet:			
Sapling/Shrub Stratum (Plot size: 15')	85	= Total Cove	r	Total % Cover of: Multiply by: OBL species 0 x 1 = 0			
1. Acer rubrum	20	50.0%	FAC				
2. Pinus strobus	10	25.0%	FACU	FACW species $0 \times 2 = 0$			
3. Fraxinus americana	5	12.5%	FACU	FAC species $50 \times 3 = 150$			
4. Quercus rubra	5	12.5%	FACU-	FACU speci es $113 \times 4 = 452$			
5	0	0.0%		UPL species $3 \times 5 = 15$			
6	0	0.0%		Column Totals: 166 (A) 617 (B)			
7	0	0.0%		Prevalence Index = $B/A = 3.717$			
··		= Total Cove					
Herb Stratum (Plot size: 5')	40		•	Hydrophytic Vegetation Indicators:			
1.Aralia nudicaulis	33	80.5%	FACU	Rapid Test for Hydrophytic Vegetation			
2. Trientalis borealis	5	12.2%	FAC	Dominance Test is > 50%			
3.Polygonatum pubescens		7.3%	UPL	Prevalence Index is \leq 3.0 ¹			
4.		0.0%		Morphological Adaptations ¹ (Provide supporting			
5.		0.0%		data in Remarks or on a separate sheet)			
6.	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)			
7.	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must			
8	0	0.0%		be present, unless disturbed or problematic.			
9.	0	0.0%		Definitions of Vegetation Strata:			
10.	0	0.0%					
11.	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.			
12.	0	0.0%		at breast height (DBH), regardless of height.			
		= Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall			
Woody Vine Stratum (Plot size:)		_	-				
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.			
2	0						
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in			
4	0	0.0%		height.			
	0	= Total Cove	r				
				Hydrophytic Vegetation			
				Present? Yes O No O			
Remarks: (Include photo numbers here or on a separate she	et.)						

Depth (inches)		Matrix			edox Features		·	- .
	Color (I		<u>%</u>	Color (moist)	% Type ¹	Loc ²	Texture	Remarks
0-9	10YR	3/2	100%				Loam	
9-12	10YR	4/3	100%				Fine Sandy Loam	
							-	
							-	
Type: C=Co	ncentration. D	=Depletio	n. RM=Red	uced Matrix, CS=Cove	ered or Coated Sand Gra	ains ² Loca	tion: PL=Pore Lining. M=N	latrix
Hydric Soil	Indicators:						Indicators for Probl	ematic Hydric Soils : ³
Histosol	(A1)			Polyvalue Bel	low Surface (S8) (LRR F	R,		(LRR K, L, MLRA 149B)
	oipedon (A2)			MLRA 149B)		A 140D)		ox (A16) (LRR K, L, R)
Black Hi					rface (S9) (LRR R, MLF			or Peat (S3) (LRR K, L, R)
	en Sulfide (A4)				y Mineral (F1) LRR K, L) d Matrix (F2)		Dark Surface (S7)	(LRR K, L)
	d Layers (A5)			Depleted Mat			Polyvalue Below S	Surface (S8) (LRR K, L)
	d Below Dark S		.11)	Redox Dark S			Thin Dark Surface	(S9) (LRR K, L)
_	ark Surface (A1				k Surface (F7)		Iron-Manganese N	Masses (F12) (LRR K, L, R)
	luck Mineral (S leyed Matrix (S			Redox Depre				ain Soils (F19) (MLRA 149B)
	edox (S5)	54)						5) (MLRA 144A, 145, 149B)
·	Matrix (S6)						Red Parent Mater	
	rface (S7) (LRI	R R, MLRA	A 149B)				Very Shallow Dark	
				nd hydrology must be	e present, unless disturk	and or proble	Other (Explain in	Remarks)
			iii aliu wetia	na nyarology must be	e present, unless disturt			
	Layer (if obs	erved):						
Туре: Е							Hydric Soil Present?	Yes 🔿 No 🖲
Depth (in	ches): 12							
Remarks:								



AN23 Upland



AN23 Wetland

					0		
Project/Site: Antrim Wind Project		City/County:	Antrim		Sampling Date: 1	8-Aug-11	
Applicant/Owner: Eolian Renewable I	Energy, LLC		State:	NH	Sampling Point:	AN24 wetland	
Investigator(s): AF JG	Section, Township, Range: S. T		Т.	R.			
Landform (hillslope, terrace, etc.):	Terrace	Local relief (c	oncave, convex, none)	concave	Slope:	0.0 % / 0.0	
Subregion (LRR or MLRA):	Lat.:		Long.:		Dat	tum:	
Soil Map Unit Name:			NWI classification: PFO				
Are Vegetation , Soil Are Vegetation , Soil Summary of Findings - At	, or Hydrology naturally	tly disturbed? problematic? sampling p	Are "Normal Circu (If needed, expla oint locations, t	in any answ	ers in Remarks.)	● No ○ eatures, etc.	
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes ● No ○ Yes ● No ○ Yes ● No ○		e Sampled Area n a Wetland? Ye	s 🖲 No C)		
Remarks: (Explain alternative pro Isolated PFO with ATV trail throug	ocedures here or in a separate reportion of west side of wetland. Contains						

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)				
Primary Indicators (minimum of one required;	Surface Soil Cracks (B6)					
Surface Water (A1)	✓ Water-Stained Leaves (B9)	✓ Drainage Patterns (B10)				
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)				
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)				
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)				
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)				
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)				
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)				
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)				
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)				
Sparsely Vegetated Concave Surface (B8)	_ 、,	✓ FAC-neutral Test (D5)				
Field Observations:						
Surface Water Present? Yes No	Depth (inches): 2					
Water Table Present? Yes O No •	Depth (inches):	·· • • •				
Saturation Present? (includes capillary fringe) Yes • No	Wetland Hy Depth (inches):0	drology Present? Yes $ullet$ No $igloo$				
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:						
Remarks:						
Sphagnum 50% cover.						
		enthesentual and Northesest Degion Interim Version				

	into i	Dominant Species?		Sampling Point: AN24 wetland
Tree Stratum (Plot size: 30')	Absolute % Cover	-	Indicator Status	Dominance Test worksheet:
1 Acer rubrum	33	76.7%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: 6 (A)
O Detuis elle elevelende	10	 ✓ 70.7% ✓ 23.3% 	FAC	
-			FAC	Total Number of Dominant
3		0.0%		Species Across All Strata: 6 (B)
4	0	0.0%		Demonst of dominant Crossics
5		0.0%		Percent of dominant Species That Are OBL, FACW, or FAC:100.0% (A/B)
6		0.0%		
7	0	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	43	= Total Cove	r	Total % Cover of: Multiply by: OBL species 0 x 1 = 0
1. Hamamelis virginiana	10	66.7%	FAC-	
2. Betula alleghaniensis	5	33.3%	FAC	
3.		0.0%		FAC speci es $58 \times 3 = 174$
4	0	0.0%		FACU species $0 \times 4 = 0$
5	0	0.0%		UPL species $0 \times 5 = 0$
		0.0%		Column Totals: 93 (A) 244 (B)
7		0.0%		
-		= Total Cove	r	Prevalence Index = B/A = 2.624 Hydrophytic Vegetation Indicators:
Herb Stratum (Plot size: 5')				Rapid Test for Hydrophytic Vegetation
1.Osmunda cinnamomea	25	71.4%	FACW	✓ Dominance Test is > 50%
2.Rubus hispidus	10	28.6%	FACW	✓ Dominance rest is > 50% ✓ Prevalence Index is $\leq 3.0^{1}$
3	0	0.0%		
4.	0	0.0%		Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5.	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6.	0	0.0%		
7.	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must
8.	0	0.0%		be present, unless disturbed or problematic.
9.	0	0.0%		Definitions of Vegetation Strata:
10.	0	0.0%		
11.				Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
12.	0	0.0%		a breast height (DBH), regardless of height.
	0 35	0.0% = Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
Woody Vine Stratum (Plot size:)	0	0.0%		
1				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
2				
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0	0.0%		height.
	0	= Total Cove	r	
				Hydrophytic Vegetation Present? Yes • No O
Remarks: (Include photo numbers here or on a separate she	eet.)			

Depth		Matrix	-	Redox Features	_		
(inches)	Color (I		%	Color (moist) % Type 1 L	-0C ²	Texture	Remarks sapri c
0-8	10YR	2/1	100%			Muck	
8-12	10YR	2/1	100%			Very Fine Sandy Loan	n
				·			
				·			
				·			
						P	
				·			
¹ Type: C=Cor		- Depletio	n RM=Rec	Juced Matrix, CS=Covered or Coated Sand Grains	² l ocati	ion: PI =Pore Lining N	M=Matrix
Hydric Soil		Depictio			Locati		
Histosol				Polyvalue Below Surface (S8) (LRR R,		Indicators for Pr	roblematic Hydric Soils : ³
	ipedon (A2)			MLRA 149B)		2 cm Muck (A	10) (LRR K, L, MLRA 149B)
Black His	•			Thin Dark Surface (S9) (LRR R, MLRA 14	9B)	Coast Prairie F	Redox (A16) (LRR K, L, R)
_	n Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)		5 cm Mucky P	Peat or Peat (S3) (LRR K, L, R)
	I Layers (A5)			Loamy Gleyed Matrix (F2)			(S7) (LRR K, L)
	Below Dark S	Surfaco (A	11)	Depleted Matrix (F3)			ow Surface (S8) (LRR K, L)
_	rk Surface (A		11)	Redox Dark Surface (F6)			face (S9) (LRR K, L)
_	uck Mineral (S			Depleted Dark Surface (F7)			ese Masses (F12) (LRR K, L, R)
	leyed Matrix (3			Redox Depressions (F8)		_	odplain Soils (F19) (MLRA 149B)
	edox (S5)	34)		• • • •			(TA6) (MLRA 144A, 145, 149B)
_	Matrix (S6)					Red Parent Ma	. ,
	face (S7) (LRI		1/0R)				Dark Surface (TF12)
						Other (Explain	n in Remarks)
³ Indicators of	of hydrophytic	vegetatio	n and wetl	and hydrology must be present, unless disturbed o	r probler	matic.	
Restrictive I	_ayer (if obs	erved):					
Type: R	lefusal						
Depth (in	ches): 12					Hydric Soil Presen	nt? Yes $ullet$ No $igodom$
Remarks:							
Remains.							

						0		
Project/Site: Antrim Wind Project	City/County: Antrim				Sampling Date: 18-Aug-11			
Applicant/Owner: Eolian Renewable Energy, LLC				State: N	H	Sampling Point:	AN24 Up	land
Investigator(s): AF JG		Section, T	ownship, Ran	ge: S.	т.	R.		
Landform (hillslope, terrace, etc.): Hillside		Local relief (c	oncave, conve	ex, none):	undulating	g Slope:	5.0 % /	2.9°
Subregion (LRR or MLRA):	Lat.:	Long.: Datum:						
Soil Map Unit Name:				-	NWI classifi	cation:		
Are climatic/hydrologic conditions on the site typical Are Vegetation , Soil , or Hydrology Are Vegetation , Soil , or Hydrology Summary of Findings - Attach site ma	significant	ly disturbed? problematic?	(If need	mal Circur ed, explair	2	resent? Yes		etc.
Hydrophytic Vegetation Present?YesNoHydric Soil Present?YesNoWetland Hydrology Present?YesNo	ullet		e Sampled Are n a Wetland?	ea Yes	○ _{No} ●			
Remarks: (Explain alternative procedures here or i	n a separate repo	rt.)						

	Secondary Indicators (minimum of 2 required)		
check all that apply)	Surface Soil Cracks (B6)		
Water-Stained Leaves (B9)	Drainage Patterns (B10)		
Aquatic Fauna (B13)	Moss Trim Lines (B16)		
Marl Deposits (B15)	Dry Season Water Table (C2)		
Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)		
Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)		
Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)		
Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)		
ron Deposits (B5) Thin Muck Surface (C7)			
	FAC-neutral Test (D5)		
Depth (inches):			
Depth (inches):	rdrology Present? Yes 🔿 No 🖲		
Wetland Hy Depth (inches):	rdrology Present? Yes 🔾 No 🖲		
pring well, aerial photos, previous inspections), if av	ailable:		
	Aquatic Fauna (B13) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Thin Muck Surface (C7) Other (Explain in Remarks) Depth (inches): Depth (inches): Uepth (inches):		

	int5	Dominant Species?		Sampling Point: AN24 Upland
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	
1. Picea rubens	10	16.7%	FACU	Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)
2. Tsuga canadensis		41.7%	FACU	
3. Betula papyrifera		16.7%	FACU	Total Number of Dominant
1	45	25.0%	FACU-	Species Across All Strata: 8 (B)
4. <u>Quercus rubra</u> 5		0.0%		Percent of dominant Species
6.		0.0%		That Are OBL, FACW, or FAC: 25.0% (A/B)
		0.0%		
7				Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	60	= Total Cove	r	Total % Cover of: Multiply by:
1. Fagus grandifolia	5	20.0%	FACU	OBL species $0 \times 1 = 0$
2. Picea rubens		20.0%	FACU	FACW species $0 \times 2 = 0$
3. Hamamelis virginiana		20.0%	FAC-	FAC speci es 18 x 3 = 54
4		40.0%	FAC	FACU speci es $84 x 4 = 336$
_		0.0%		UPL species $5 \times 5 = 25$
C		0.0%		Column Totals: 107 (A) 415 (B)
7		0.0%		
1	-	-		Prevalence Index = B/A = <u>3.879</u>
Herb Stratum (Plot size: 5')	25	= Total Cove	۲.	Hydrophytic Vegetation Indicators:
1.Aralia nudicaulis	8	36.4%	FACU	Rapid Test for Hydrophytic Vegetation
2.Lycopodium obscurum		13.6%	FACU	Dominance Test is > 50%
3 Décembritiques accuellingues		13.6%	FACU	Prevalence Index is $\leq 3.0^{1}$
		22.7%	UPL	Morphological Adaptations ¹ (Provide supporting
E		13.6%	FAC	data in Remarks or on a separate sheet)
6.		0.0%	TAC	Problematic Hydrophytic Vegetation ¹ (Explain)
7.				¹ Indicators of hydric soil and wetland hydrology must
8.		0.0%		be present, unless disturbed or problematic.
o <u>.</u> 9.		0.0%		Definitions of Vegetation Strata:
	0	0.0%		
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11		0.0%		at breast height (DBH), regardless of height.
12	0	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)	22	= Total Cove	r	greater than 3.28 ft (1m) tall
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0	0.0%		height.
	0	= Total Cove	r	
				Hydrophytic
				Vegetation Present? Yes O No •
Remarks: (Include photo numbers here or on a separate she	eet)			
remarks. (Include proto numbers here of on a separate sh				

Depth		Matrix	•	needed to document the indicator or confirm the Redox Features		
(inches)	Color (r		%	Color (moist) % Type 1 Loc ²		Remarks
0-4	10YR	3/2	100%		Loam	
4-8	10YR	4/3	100%		Fine Sandy Loam	
8-10	10YR	5/8	100%		Fine Sandy Loam	
1- 0.0						
		=Depletio	n. KM=Red	uced Matrix, CS=Covered or Coated Sand Grains ² Lo		2
Hydric Soil Histosol				Polyvalue Below Surface (S8) (LRR R,		lematic Hydric Soils : 3
	ipedon (A2)			MLRA 149B)		(LRR K, L, MLRA 149B)
Black His				Thin Dark Surface (S9) (LRR R, MLRA 149B)		lox (A16) (LRR K, L, R)
_	n Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)		or Peat (S3) (LRR K, L, R)
	Layers (A5)			Loamy Gleyed Matrix (F2)	Dark Surface (S7) (LRR K, L) Surface (S8) (LRR K, L)
Depleted	l Below Dark S	Surface (A	.11)	Depleted Matrix (F3)		e (S9) (LRR K, L)
Thick Da	rk Surface (A1	2)		Redox Dark Surface (F6)		Masses (F12) (LRR K, L, R)
Sandy M	uck Mineral (S	51)		Depleted Dark Surface (F7)		lain Soils (F19) (MLRA 149B)
_	eyed Matrix (S	54)		Redox Depressions (F8)		6) (MLRA 144A, 145, 149B)
	edox (S5)				Red Parent Mate	rial (TF2)
	Matrix (S6) face (S7) (LRF	אסווא סכ	1400)		Very Shallow Dar	
					Other (Explain in	Remarks)
³ Indicators of	of hydrophytic	vegetatio	n and wetla	nd hydrology must be present, unless disturbed or pro	blematic.	
Restrictive I		erved):				
Type: R					Hydric Soil Present?	Yes 🔿 No 🖲
Depth (ind	ches): 10				rigune son resent.	
Remarks:						



AN24 Wetland



AN24 Upland



AN24 Wetland

					•		
Project/Site: Antrim Wind Project		City/County:	Antrim		Sampling Date: 1	8-Aug-11	
Applicant/Owner: Eolian Renewable E	nergy, LLC		State: N	Н	Sampling Point:	AN25 Wetland	
Investigator(s): AF JG		Section, To	wnship, Range: S.	т.	R.		
Landform (hillslope, terrace, etc.):	Terrace	Local relief (co	oncave, convex, none):	concave	Slope:	0.0 % / 0.0 °	
Subregion (LRR or MLRA):	Lat.:	Long.: Datum:					
Soil Map Unit Name:				NWI classif	ication: PFO		
Are Vegetation , Soil Are Vegetation , Soil Summary of Findings - At	, or Hydrology 🗌 naturally p	ily disturbed? problematic? sampling p	Are "Normal Circu (If needed, explai Dint locations, tr	n any answe	ers in Remarks.)		
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes ● No Yes ● No Yes ● No		Sampled Area n a Wetland? Yes	s 🖲 No C)		
	cedures here or in a separate repo contains VP-4. Adjacent to ATV tra	•					

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)				
Primary Indicators (minimum of one required;	check all that apply)	Surface Soil Cracks (B6)				
Surface Water (A1)	Drainage Patterns (B10)					
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)				
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)				
✓ Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)				
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)				
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)				
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)				
Iron Deposits (B5)	Iron Deposits (B5) Thin Muck Surface (C7)					
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)				
Sparsely Vegetated Concave Surface (B8)		✓ FAC-neutral Test (D5)				
Field Observations:						
Surface Water Present? Yes No	Depth (inches): <u>6</u>					
Water Table Present? Yes O No O						
Saturation Present? (includes capillary fringe) Yes • No	Wetland Hyd Depth (inches):0	drology Present? Yes $ullet$ No $igodoldsymbol{ imes}$				
Describe Recorded Data (stream gauge, monit	oring well, aerial photos, previous inspections), if ava	ailable:				
Remarks:						
Contained up to 2 feet of standing water in Ma	iy.					

	113	Dominant Species?		Sampling Point: AN25 Wetland
Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
1. Acer rubrum	50	✓ 100.0%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)
2	0	0.0%		
3.	0	0.0%		Total Number of Dominant Species Across All Strata: 5 (B)
4	0	0.0%		Species Across All Strata: (B)
5.		0.0%		Percent of dominant Species
6		0.0%		That Are OBL, FACW, or FAC:(A/B)
7	0	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')		= Total Cover	·	Total % Cover of: Multiply by:
	0	✔ 100.0%	54014	OBL species 5 x 1 = 5
1. <u>Ilex verticillata</u>	3		FACW+	FACW species $21 \times 2 = 42$
2	0	0.0%		FAC species 50 x 3 = 150
3	0	0.0%		FACU species $0 \times 4 = 0$
4	0	0.0%		UPL species $0 \times 5 = 0$
5	0	0.0%		
6	0	0.0%		Column Totals: <u>76</u> (A) <u>197</u> (B)
7	0	0.0%		Prevalence Index = $B/A = 2.592$
Herb Stratum (Plot size: 5')	3	= Total Cover	Γ	Hydrophytic Vegetation Indicators:
1.Osmunda regalis	5	21.7%	OBL	Rapid Test for Hydrophytic Vegetation
	10	43.5%	FACW+	✓ Dominance Test is > 50%
3.0smunda cinnamomea	5	 ✓ 43.3 % ✓ 21.7% 	FACW	✓ Prevalence Index is ≤3.0 1
4. Carex intumescens	3	13.0%	FACW+	Morphological Adaptations ¹ (Provide supporting
5.	0	0.0%	TACW+	data in Remarks or on a separate sheet)
6.	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
7.	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must
8.				be present, unless disturbed or problematic.
9.				Definitions of Vegetation Strata:
9. 10.	0			
11.	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
12.	0	0.0%		at breast height (DBH), regardless of height.
12	 23	= Total Cover		Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)		_		greater than 3.28 ft (1m) tall
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
2	0	0.0%		size, and woody plants less than 3.26 it tall.
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0	0.0%		height.
	0	= Total Cover	r	
				Hydrophytic
				Vegetation Present? Yes I No
				Present? Yes VO C
Pamarks: (Include photo numbers here or on a constate she	at)			1
Remarks: (Include photo numbers here or on a separate shee	=1.)			

O-8 TOVR 2/1 Muck 8-16 2.5Y 5/1 70% 10YR 5/6 25% M Fine Loamy Sand 8-16 2.5Y 5/1 70% 10YR 5/6 25% M Fine Loamy Sand 9 2.5Y 6/1 5% D M Image: Sand Sand Sand Sand Sand Sand Sand Sand	0-8 10YR 2/1	Depth (inchos)		Matrix				dox Featu				- ·	
8-16 2.5Y 5/1 70% 10YR 5/6 25% C M Fine Loamy Sand 9 2.5Y 6/1 5% D M 9 9 9 2.5Y 6/1 5% D M 9 9 9 9 6/1 5% D M 9 9 9 9 9 9 0	8-16 2.5Y 5/1 70% 10YR 5/6 25% C M File Loamy Sand 9 2.5Y 6/1 5% D M 9 9 9 2.5Y 6/1 5% D M 9 9 9 9 9 9 9 9 9 9 9 9	(inches)			%	Color	(moist)	%	Type 1	Loc ²		Remarks	
2.5Y 6/1 5% D M 2.5Y 6/1 5% D D 2.5Y 6/1 10 10 D 2.5Y 0 <	2.5Y 6/1 5% D M Image: C = Concentration. D = Depletion. RM = Reduced Matrix, CS = Covered or Coated Sand Grains *Location: PL = Pore Lining. M = Matrix Image: C = Concentration. D = Depletion. RM = Reduced Matrix, CS = Covered or Coated Sand Grains *Location: PL = Pore Lining. M = Matrix Image: C = Concentration. D = Depletion. RM = Reduced Matrix, CS = Covered or Coated Sand Grains *Location: PL = Pore Lining. M = Matrix Image: C = Concentration. D = Depletion. RM = Reduced Matrix, CS = Covered or Coated Sand Grains *Location: PL = Pore Lining. M = Matrix Image: C = Concentration. D = Depletion. RM = Reduced Matrix, CS = Covered or Coated Sand Grains *Location: PL = Pore Lining. M = Matrix Image: C = Concentration. D = Depletion. RM = Reduced Matrix, CS = Covered or Coated Sand Grains *Location: PL = Pore Lining. M = Matrix Image: C = Concentration. D = Depletion. RM = Reduced Matrix (CS = Covered or Coated Sand Grains *Location: PL = Pore Lining. M = Matrix Image: C = Concentration. D = Depletion. RM = Reduced Matrix (F3) Image: C = Concentration Reduced Matrix (F3) Image: C = Concentration Reduced Matrix (F3) Image: C = Concentration Reduced Matrix (F3) Image: C = Concentration Reduced Surface (F7) Image: C = Concentration Reduced Matrix (F3) Image: C = Concentration Reduced Surface (F7) Image: C = Concentration Reduced Sur	0-8	10YR	2/1									
pe: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ² Location: PL=Pore Lining, M=Matrix rdric Soil Indicators: Indicators (A1) Polyvalue Below Surface (S8) (LRR R, MLRA 149B) Histic Explored n (A2) MLRA 149B) Coast Prainie Redox (A16) (LRR K, L, R) Black Histic (A3) Thin Dark, Surface (S9) (LR R, MLRA 149B) Coast Prainie Redox (A16) (LRR K, L, R) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Depleted Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Depleted Matrix (F2) Sandy Muck Mineral (S1) Depleted Matrix (F3) Thin Dark Surface (F7) Sandy Muck Mineral (S1) Depleted Matrix (F3) Depleted Matrix (F3) Sandy Muck Mineral (S1) Depleted Matrix (F3) Pledmont Floodplain Solis (F19) (MLRA 149B) Sandy Muck Mineral (S1) Depleted Matrix (F3) Pledmont Floodplain Solis (F19) (MLRA 149B) Sandy Muck Mineral (S1) Depleted Matrix (F4) Pledmont Floodplain Solis (F19) (MLRA 149B) Sandy Ruck Mineral (S1) Depleted Matrix (S6) Redox Depressions (F8) Sandy Ruck Mineral (S1) Depleted Matrix (S6) Pledmont Floodplain Solis (F19) (MLRA 149B) Micators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. <td>ge: CConcentration. D-Depletion. RM-Reduced Matrix, CS-Covered or Coated Sand Grains ?Location: PL-Pore Lining. M-Matrix ge: CConcentration. D-Depletion. RM-Reduced Matrix, CS-Covered or Coated Sand Grains ?Location: PL-Pore Lining. M-Matrix ge: CConcentration. D-Depletion. RM-Reduced Matrix, CS-Covered or Coated Sand Grains ?Location: PL-Pore Lining. M-Matrix ge: CConcentration. D-Depletion. RM-Reduced Matrix, CS-Covered or Coated Sand Grains ?Location: PL-Pore Lining. M-Matrix ge: CConcentration. D-Depletion. RM-Reduced Matrix, CS-Covered or Coated Sand Grains ?Location: PL-Pore Lining. M-Matrix Histic Explored on (A2) International Surface (S8) (LRR R, MLRA 1498) Indicators for Problematic Hydric Soils : ³ Histic Surface (A1) Depleted Matrix (F2) Depleted Matrix (F2) Depleted Matrix (F3) Depleted Dark Surface (A12) Depleted Dark Surface (F7) Depleted Dark Surface (F7) Depleted Matrix (F3) Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Piedmont Floodplain Soils (F19) (MLRA 1498) Mesic Spodic (TA6) (MLRA 1448, 145, 1498) Sandy Kuck Mineral (S1) Depleted Matrix (S6) Wesic Spodic (TA6) (MLRA 1448, 145, 1498) Mesic Spodic (TA6) (MLRA 1444, 145, 1498) Sandy Kuck Mineral (S1) Depleted Matrix (S6) Wesic Spodic (TA6) (MLRA 1448, 145, 1498) Mesic Spodic (TA6) (MLRA 1448, 145, 1498) <td< td=""><td>8-16</td><td>2.5Y</td><td>5/1</td><td>70%</td><td>10YR</td><td>5/6</td><td>25%</td><td>C</td><td>Μ</td><td>Fine Loamy Sand</td><td></td></td<></td>	ge: CConcentration. D-Depletion. RM-Reduced Matrix, CS-Covered or Coated Sand Grains ?Location: PL-Pore Lining. M-Matrix ge: CConcentration. D-Depletion. RM-Reduced Matrix, CS-Covered or Coated Sand Grains ?Location: PL-Pore Lining. M-Matrix ge: CConcentration. D-Depletion. RM-Reduced Matrix, CS-Covered or Coated Sand Grains ?Location: PL-Pore Lining. M-Matrix ge: CConcentration. D-Depletion. RM-Reduced Matrix, CS-Covered or Coated Sand Grains ?Location: PL-Pore Lining. M-Matrix ge: CConcentration. D-Depletion. RM-Reduced Matrix, CS-Covered or Coated Sand Grains ?Location: PL-Pore Lining. M-Matrix Histic Explored on (A2) International Surface (S8) (LRR R, MLRA 1498) Indicators for Problematic Hydric Soils : ³ Histic Surface (A1) Depleted Matrix (F2) Depleted Matrix (F2) Depleted Matrix (F3) Depleted Dark Surface (A12) Depleted Dark Surface (F7) Depleted Dark Surface (F7) Depleted Matrix (F3) Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Piedmont Floodplain Soils (F19) (MLRA 1498) Mesic Spodic (TA6) (MLRA 1448, 145, 1498) Sandy Kuck Mineral (S1) Depleted Matrix (S6) Wesic Spodic (TA6) (MLRA 1448, 145, 1498) Mesic Spodic (TA6) (MLRA 1444, 145, 1498) Sandy Kuck Mineral (S1) Depleted Matrix (S6) Wesic Spodic (TA6) (MLRA 1448, 145, 1498) Mesic Spodic (TA6) (MLRA 1448, 145, 1498) <td< td=""><td>8-16</td><td>2.5Y</td><td>5/1</td><td>70%</td><td>10YR</td><td>5/6</td><td>25%</td><td>C</td><td>Μ</td><td>Fine Loamy Sand</td><td></td></td<>	8-16	2.5Y	5/1	70%	10YR	5/6	25%	C	Μ	Fine Loamy Sand		
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Stratified Layers (A5) Loamy Gleyed Matrix (F2) Dark Surface (S7) (LRR K, L) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Polyvalue Below Surface (S8) (LRR K, L) Thick Dark Surface (A12) Redox Dark Surface (F6) Thin Dark Surface (S9) (LRR K, L) Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Piedmont Floodplain Soils (F19) (MLRA 1449B) Sandy Redox (S5) Redox Depressions (F8) Mesic Spodic (TA6) (MLRA 144A, 145, 149B) Stripped Matrix (S6) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Dark Surface (S7) (LRR R, MLRA 149B) Other (Explain in Remarks) Other (Explain in Remarks) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Hydric Soil Present? Yes No	Stratified Layers (A5) Loamy Gleyed Matrix (F2) Dark Surface (S7) (LRR K, L) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Polyvalue Below Surface (S8) (LRR K, L) Thick Dark Surface (A12) Redox Dark Surface (F6) Iron-Manganese Masses (F12) (LRR K, L, R) Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Piedmont Floodplain Soils (F19) (MLRA 149B) Sandy Redox (S5) Redox Depressions (F8) Mesic Spodic (TA6) (MLRA 144A, 145, 149B) Stripped Matrix (S6) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Dark Surface (S7) (LRR R, MLRA 149B) Other (Explain in Remarks) Other (Explain in Remarks) ndicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Hydric Soil Present? Yes No	-)		Loa	my Mucky	Mineral (F1) LRR K, L)	1			
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Thick Dark Surface (A12) Redox Dark Surface (F0) Iron-Manganese Masses (F12) (LRR K, L, R) Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Piedmont Floodplain Soils (F19) (MLRA 149B) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Mesic Spodic (TA6) (MLRA 144A, 145, 149B) Sandy Redox (S5) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Dark Surface (S7) (LRR R, MLRA 149B) Other (Explain in Remarks) ndicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Other (Explain in Remarks) Strictive Layer (if observed): Type:	Thick Dark Surface (A12) Redox Dark Surface (F0) Iron-Manganese Masses (F12) (LRR K, L, R) Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Piedmont Floodplain Soils (F19) (MLRA 149B) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Mesic Spodic (TA6) (MLRA 144A, 145, 149B) Sandy Redox (S5) Red Parent Material (TF2) Stripped Matrix (S6) Very Shallow Dark Surface (TF12) Dark Surface (S7) (LRR R, MLRA 149B) Other (Explain in Remarks) ndicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Hydric Soil Present? Yes No	Depleted	Below Dark	Surface (A	11)								
Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Sandy Redox (S5) Mesic Spodic (TA6) (MLRA 144A, 145, 149B) Stripped Matrix (S6) Very Shallow Dark Surface (TF12) Dark Surface (S7) (LRR R, MLRA 149B) Other (Explain in Remarks) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Other (Explain in Remarks) Strictive Layer (if observed): Type: Hydric Soil Present? Yes No	Sandy Muck Mineral (S1) Depieted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Sandy Redox (S5) Mesic Spodic (TA6) (MLRA 144A, 145, 149B) Stripped Matrix (S6) Red Parent Material (TF2) Dark Surface (S7) (LRR R, MLRA 149B) Very Shallow Dark Surface (TF12) other (Explain in Remarks) Other (Explain in Remarks) ndicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Hydric Soil Present? Type: Hydric Soil Present? Yes] Thick Dark Surface (A12)											
Sandy Gleyed Matrix (S4) Redox Depressions (F8) Mesic Spodic (TA6) (MLRA 144A, 145, 149B) Sandy Redox (S5) Red Parent Material (TF2) Stripped Matrix (S6) Very Shallow Dark Surface (TF12) Dark Surface (S7) (LRR R, MLRA 149B) Other (Explain in Remarks) ndicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. strictive Layer (if observed): Type: Depth (inches): Metric Soil Present? Yes No	Sandy Gleyed Matrix (S4) Redox Depressions (F8) Mesic Spodic (TA6) (MLRA 144A, 145, 149B) Sandy Redox (S5) Red Parent Material (TF2) Stripped Matrix (S6) Very Shallow Dark Surface (TF12) Dark Surface (S7) (LRR R, MLRA 149B) Other (Explain in Remarks) ndicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Other (Explain in Remarks) strictive Layer (if observed): Type: Hydric Soil Present? Yes No] Sandy M	uck Mineral (S1)						7)				
Sandy Redox (S5) Red Parent Material (TF2) Stripped Matrix (S6) Very Shallow Dark Surface (TF12) Dark Surface (S7) (LRR R, MLRA 149B) Other (Explain in Remarks) indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Image: Comparison of the strict of the stri	Sandy Redox (S5) Red Parent Material (TF2) Stripped Matrix (S6) Very Shallow Dark Surface (TF12) Dark Surface (S7) (LRR R, MLRA 149B) Other (Explain in Remarks) ndicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Image: Comparison of the comparison	Sandy G				Red	Redox Depressions (F8)						
Stripped Matrix (S6) Very Shallow Dark Surface (TF12) Dark Surface (S7) (LRR R, MLRA 149B) Other (Explain in Remarks) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Strictive Layer (if observed): Type:	Stripped Matrix (S6) Uvery Shallow Dark Surface (TF12) Dark Surface (S7) (LRR R, MLRA 149B) Other (Explain in Remarks) ndicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Strictive Layer (if observed): Type:	Sandy R	edox (S5)										
Dark Surface (S7) (LRR R, MLRA 149B) Other (Explain in Remarks) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Strictive Layer (if observed): strictive Layer (if observed): Hydric Soil Present? Yes No O Depth (inches): No O	Dark Surface (S7) (LRR R, MLRA 149B) Other (Explain in Remarks) ndicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. strictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes No O	Stripped	Matrix (S6)										
ndicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. strictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes No	ndicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. strictive Layer (if observed): Type:	Dark Sur	face (S7) (LF	rr r, mlra	A 149B)								
strictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes No	strictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes No	Indicators of	of hydrophyti	c vegetatio	n and wetla	nd hydrolog	y must be	present, un	less disturk	bed or probl			
Type:	Type:						-						
Depth (inches): Hydric Soil Present? Yes • No · · · · · · · · · · · · · · · · · ·	Depth (inches): Hydric Soil Present? Yes • No O			serveu).									
			choc).								Hydric Soil Present?	Yes 🔍 No 🔾	
	emarks:	-									-		

Project/Site: Antrim Wind Project		City/County: Antrim		Sampling Date: 1	18-Aug-11
Applicant/Owner: Eolian Renewable E	nergy, LLC		State: NH	Sampling Point:	AN25 upland
Investigator(s): AF JG		Section, Township, Ran	ge: S. T.	R.	
Landform (hillslope, terrace, etc.):	Undulating	Local relief (concave, conve	ex, none): convex	Slope:	20.0 % / 11.3°
Subregion (LRR or MLRA):	Lat.:		Long.:	Dat	tum:
Soil Map Unit Name:			NWI classi	fication:	-
Are climatic/hydrologic conditions of Are Vegetation , Soil Are Vegetation , Soil Summary of Findings - At	, or Hydrology Significant	tly disturbed? Are "Nor problematic? (If need	(If no, explain in mal Circumstances" ed, explain any answ ions, transects	present? Yes	
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes O No O Yes No O Yes No O	Is the Sampled Are within a Wetland?		D	
Remarks: (Explain alternative pro ATV trail nearby	cedures here or in a separate repo	rt.)			

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)
Primary Indicators (minimum of one required;	check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2)	 Oxidized Rhizospheres along Living Roots (C3) 	Saturation Visible on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)		FAC-neutral Test (D5)
Field Observations:		
Surface Water Present? Yes O No O	Depth (inches):	
Water Table Present? Yes O No •	Depth (inches):	drology Present? Yes 🔿 No 🖲
Saturation Present? Yes O No •	Wetland Hy	drology Present? Yes 🔾 No 鱼
Describe Recorded Data (stream gauge, monit	oring well, aerial photos, previous inspections), if ava	ailable:
Remarks:		

VEGETATION - Use scientific names of pra	ants	Dominant Species?		Sampling Point: AN25 upland
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
1. Picea rubens	15	14.2%	FACU	Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)
2. Tsuga canadensis		23.6%	FACU	
3. Quercus rubra		62.3%	FACU-	Total Number of Dominant Species Across All Strata: 7 (B)
4.		0.0%		Species Across All Strata: 7 (B)
5.	0	0.0%		Percent of dominant Species
6.	0	0.0%		That Are OBL, FACW, or FAC: 0.0% (A/B)
7	0	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')		= Total Cove	r	Total % Cover of: Multiply by:
	10	33.3%	FACU	OBL species $0 \times 1 = 0$
	15	✓ 50.0%	FACU	FACW species $0 \times 2 = 0$
		16.7%	FACU	FAC species x 3 =45
		0.0%	1700	FACU speci es 216 x 4 = 864
4	0	0.0%		UPL species $10 \times 5 = 50$
5	0	0.0%		Column Totals: 241 (A) 959 (B)
6	0	0.0%		·
7				Prevalence Index = B/A = <u>3.979</u>
Herb Stratum (Plot size: 5')	30	= Total Cove	r	Hydrophytic Vegetation Indicators:
1.Maianthemum canadense	10	9.5%	FAC-	Dominance Test is > 50%
2.Pteridium aquilinum	50	47.6%	FACU	Prevalence Index is $\leq 3.0^{-1}$
3.Medeola virginiana	5	4.8%	UPL	
4.Gaultheria procumbens	15	✓ 14.3%	FACU	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5.Polygonatum pubescens	5	4.8%	UPL	Problematic Hydrophytic Vegetation ¹ (Explain)
6.Cornus canadensis	5	4.8%	FAC-	
7.Aralia nudicaulis	15	✔ 14.3%	FACU	¹ Indicators of hydric soil and wetland hydrology must
8	0	0.0%		be present, unless disturbed or problematic.
9	0	0.0%		Definitions of Vegetation Strata:
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0	0.0%		at breast height (DBH), regardless of height.
12	0	0.0%		Carling/abruh Wasdu plants loss than 2 in DDU and
Woody Vine Stratum (Plot size:)	105	= Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2.	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0	0.0%		height.
	0	= Total Cove	r	
				Hydrophytic Vegetation Present? Yes No 💿
Remarks: (Include photo numbers here or on a separate sh	neet.)			I

Depth		Matrix		Redox Features		
(inches)	Color (I	moist)	%	Color (moist) % Type 1 Loc ²	Texture	Remarks
0-5	10YR	2/1	100%		Loam	
5-6	2.5Y	5/1	100%		Fine Loamy Sand	
6-16	5YR	4/4	100%		Sandy Loam	
					-	
					-	
					-	
						-
		-Depletio	n PM-Pod	uced Matrix, CS=Covered or Coated Sand Grains ² Loc.	ation: DI – Dore Lining M–N	
Hydric Soil						2
Histosol				Polyvalue Below Surface (S8) (LRR R,		lematic Hydric Soils : ³
	ipedon (A2)			MLRA 149B)		(LRR K, L, MLRA 149B)
Black His				Thin Dark Surface (S9) (LRR R, MLRA 149B)		ox (A16) (LRR K, L, R)
	n Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)		or Peat (S3) (LRR K, L, R)
Stratified	Layers (A5)			Loamy Gleyed Matrix (F2)	Dark Surface (S7	Surface (S8) (LRR K, L)
	Below Dark S	Surface (A	.11)	Depleted Matrix (F3)	Thin Dark Surface	
Thick Da	rk Surface (A	12)		Redox Dark Surface (F6)		Masses (F12) (LRR K, L, R)
Sandy M	uck Mineral (S	51)		Depleted Dark Surface (F7)		ain Soils (F19) (MLRA 149B)
	leyed Matrix (S4)		Redox Depressions (F8)	_	6) (MLRA 144A, 145, 149B)
	edox (S5)				Red Parent Mater	ial (TF2)
	Matrix (S6)				Very Shallow Dar	k Surface (TF12)
Dark Sur	face (S7) (LRI	r r, mlra	A 149B)		Other (Explain in	Remarks)
³ Indicators of	of hydrophytic	vegetatio	n and wetla	nd hydrology must be present, unless disturbed or prob	ematic.	
Restrictive I	Layer (if obs	erved):				
Type:	-					
Depth (in	ches):				Hydric Soil Present?	Yes 🔾 No 🖲
Remarks:					-H	
Spodosol						



AN25 Wetland



AN25 Upland

				•	
Project/Site: Antrim Wind Project	City/County:	Antrim		Sampling Date: 1	8-Aug-11
Applicant/Owner: Eolian Renewable Energy, LLC		State:	NH	Sampling Point:	AN26 Wetland
Investigator(s): AF JG	Section, To	ownship, Range: S.	Т.	R.	
Landform (hillslope, terrace, etc.): Valley bottom	Local relief (co	oncave, convex, none)	concave	Slope:	0.0 % / 0.0
Subregion (LRR or MLRA): Lat.	:	Long.:		Dat	tum:
Soil Map Unit Name:			NWI classif	ication: PFO	
	ntly disturbed? y problematic? sampling p e	Are "Normal Circ (If needed, expla oint locations, t	in any answ	ers in Remarks.)	
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No		sampled Area n a Wetland? Ye	s 🔍 No C)	
Remarks: (Explain alternative procedures here or in a separate rep Wetland within saddle continues off site.	port.)				

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)		
Primary Indicators (minimum of one require	Surface Soil Cracks (B6)			
Surface Water (A1)	Drainage Patterns (B10)			
High Water Table (A2)	Moss Trim Lines (B16)			
Saturation (A3)	Dry Season Water Table (C2)			
Water Marks (B1)	Crayfish Burrows (C8)			
Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)		
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)		
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)		
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)		
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)		
Sparsely Vegetated Concave Surface (B8)		✓ FAC-neutral Test (D5)		
Field Observations:				
Surface Water Present? Yes No	Depth (inches): 2			
Water Table Present? Yes O No				
Saturation Present? (includes capillary fringe) Yes • No	Depth (inches): 0	-lydrology Present? Yes $ullet$ No $igodoldsymbol{ imes}$		
Describe Recorded Data (stream gauge, mor	nitoring well, aerial photos, previous inspections), if a	available:		
Remarks:				

	ints	Dominant Species?		Sampling Point: AN26 Wetland		
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:		
1. Acer rubrum	20	57.1%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: 7 (A)		
O Debute elle el entre de	15	42.9%	FAC			
-			TAC	Total Number of Dominant		
3		0.0%		Species Across All Strata: 7 (B)		
4	0	0.0%		Demont of dominant Spacing		
5		0.0%		Percent of dominant Species That Are OBL, FACW, or FAC:100.0% (A/B)		
6		0.0%				
7	0	0.0%		Prevalence Index worksheet:		
Sapling/Shrub Stratum (Plot size: 15')	35	= Total Cove	r	Total % Cover of: Multiply by: OBL species 3 x 1 = 3		
1. Fraxinus pennsylvanica	5	25.0%	FACW			
2. Acer rubrum	10	✓ 50.0%	FAC			
3. Picea mariana		25.0%	FACW-	FAC speciles $60 \times 3 = 180$		
4.	_	0.0%		FACU species x 4 =		
E		0.0%		UPL species x 5 =		
6		0.0%		Column Totals: 111 (A) 279 (B)		
7						
1		0.0%		Prevalence Index = $B/A = 2.514$		
Herb Stratum (Plot size: _5')	20	= Total Cove	r	Hydrophytic Vegetation Indicators:		
1.Onoclea sensibilis	8	14.3%	FACW	Rapid Test for Hydrophytic Vegetation		
2.Osmunda claytoniana		26.8%	FAC	✓ Dominance Test is > 50%		
3.0smunda regalis				✓ Prevalence Index is ≤3.0 1		
		5.4%	OBL	Morphological Adaptations ¹ (Provide supporting		
4. Impatiens capensis		⊻ <u>35.7%</u>	FACW	data in Remarks or on a separate sheet)		
5.Coptis trifolia	10	17.9%	FACW	Problematic Hydrophytic Vegetation ¹ (Explain)		
6	0	0.0%		1		
7	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.		
8	0	0.0%				
9	0	0.0%		Definitions of Vegetation Strata:		
10.	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter		
11.	0	0.0%		at breast height (DBH), regardless of height.		
12.	0	0.0%				
Woody Vine Stratum (Plot size:)	56	= Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall		
, ,	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of		
	0	0.0%		size, and woody plants less than 3.28 ft tall.		
2 3		0.0%				
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in		
4		-		height.		
	0	= Total Cove	r			
				Hydrophytic Vegetation		
				Present? Yes No		
Remarks: (Include photo numbers here or on a separate sh	eet.)					
	,					

(inches)			- ~ -	Redox Features	- Tet	Demender
	Color (m		%	Color (moist) % Type 1 Loc ²	Texture	Remarks sapri c
0-8	10YR	2/1	100%		Muck	
8-9	2.5Y	6/1	100%		Loamy Sand	
					· .	
vpe: C=Cor	ncentration. D=	Depletion	. RM=Redu	uced Matrix, CS=Covered or Coated Sand Grains ² Loc.	ation: PL=Pore Lining. M	=Matrix
-	Indicators:					2
Histosol				Polyvalue Below Surface (S8) (LRR R,		blematic riguite solis .
	ipedon (A2)			MLRA 149B)		0) (LRR K, L, MLRA 149B)
Black His				Thin Dark Surface (S9) (LRR R, MLRA 149B)		edox (A16) (LRR K, L, R)
	n Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)		at or Peat (S3) (LRR K, L, R)
	I Layers (A5)			Loamy Gleyed Matrix (F2)	Dark Surface (S7) (LRR K, L)
			1)	Depleted Matrix (F3)	Polyvalue Belov	w Surface (S8) (LRR K, L)
	Below Dark Su		1)	Redox Dark Surface (F6)	Thin Dark Surfa	ace (S9) (LRR K, L)
	rk Surface (A12)			Depleted Dark Surface (F7)	Iron-Manganes	e Masses (F12) (LRR K, L, R)
	uck Mineral (S1)			Redox Depressions (F8)	Piedmont Floor	iplain Soils (F19) (MLRA 149B)
-	eyed Matrix (S4	+)			Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	edox (S5)				Red Parent Ma	terial (TF2)
-	Matrix (S6)				Very Shallow D	ark Surface (TF12)
Dark Sur	face (S7) (LRR I	R, MLRA	149B)		Other (Explain	in Remarks)
ndicators of	of hydrophytic v	egetation	and wetlar	nd hydrology must be present, unless disturbed or prob	lematic.	
strictive I	_ayer (if obser	rved).				
Strictive		veu).				
Turner e	LONY				Hydric Soil Present	? Yes 🖲 No 🔾
Depth (in						
Depth (in						
Depth (in					L	
Depth (in					1	
Depth (in						
Depth (in						
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Project/Site: Antrim Wind Project	City/County: Antrim	:	Sampling Date: 18-Aug-11		
Applicant/Owner: Eolian Renewable Energy, LLC	State: NH		Sampling Point:	AN26 uplan	nd
Investigator(s): AF JG	Section, Township, Range: S.	т.	R.		
Landform (hillslope, terrace, etc.): Toeslope	Local relief (concave, convex, none): f	lat	Slope:	15.0%/8	8.5 °
Subregion (LRR or MLRA):	t.: Long.:		Dat	um:	
Soil Map Unit Name:	NW	VI classific	ation:		
	cantly disturbed? Are "Normal Circums Ily problematic? (If needed, explain a	ny answer	resent? Yes (2.
Hydrophytic Vegetation Present? Yes No ● Hydric Soil Present? Yes No ● Wetland Hydrology Present? Yes No ●	Is the Sampled Area within a Wetland? Yes	🔿 No 🖲			
Remarks: (Explain alternative procedures here or in a separate r	report.)				

Secondary Indicators (minimum of 2 required)		
Secondary Indicators (minimum of 2 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)		
loav Present? Yes 🔿 No 🖲		
logy Present? Yes 🔾 No 🖲		
ble:		

	11.5	Dominant Species?		Sampling Point: AN26 upland		
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:		
				Number of Dominant Species		
1. Fagus grandifolia		 16.7% ✓ 55.6% 	FACU	That are OBL, FACW, or FAC: (A)		
2. <u>Picea rubens</u>	50		FACU	Total Number of Dominant		
3. Betula papyrifera	15	16.7%	FACU	Species Across All Strata: (B)		
4. Betula alleghaniensis		11.1%	FAC	Dercent of dominant Species		
5		0.0%		Percent of dominant Species That Are OBL, FACW, or FAC:0.0% (A/B)		
6		0.0%				
7	0	0.0%		Prevalence Index worksheet:		
Sapling/Shrub Stratum (Plot size: 15')	90	= Total Cove	r	Total % Cover of: Multiply by:		
1. Fagus grandifolia	10	23.3%	FACU	OBL species 0 x 1 = 0		
2. Acer pensylvanicum		76.7%	FACU	FACW species $0 \times 2 = 0$		
3.		0.0%		FAC species <u>14</u> x 3 = <u>42</u>		
4	0	0.0%		FACU species x 4 =		
5	0	0.0%		UPL species5 x 5 =25		
C	0	0.0%		Column Totals: 162 (A) 639 (B)		
7.	0	0.0%		Prevalence Index = $B/A = 3.944$		
		= Total Cove				
Herb Stratum (Plot size: 5')	43	- 10121 0000	1	Hydrophytic Vegetation Indicators:		
1.Aralia nudicaulis	20	69.0%	FACU	Rapid Test for Hydrophytic Vegetation		
2. Maianthemum canadense	3	10.3%	FAC-	Dominance Test is > 50%		
3. Trientalis borealis	1	3.4%	FAC	$\square Prevalence Index is \leq 3.0^{1}$		
4.Polygonatum pubescens	5	17.2%	UPL	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)		
5.		0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)		
6.	0	0.0%				
7.	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must		
8.	0	0.0%		be present, unless disturbed or problematic.		
9.	0	0.0%		Definitions of Vegetation Strata:		
10.	0	0.0%				
11.	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.		
12.	0	0.0%				
		= Total Cove	er	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall		
Woody Vine Stratum (Plot size:)		_				
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of		
2	0	0.0%		size, and woody plants less than 3.28 ft tall.		
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in		
4	0	0.0%		height.		
	0	= Total Cove	r			
				Hydrophytic Vegetation		
				Present? Yes No •		
Remarks: (Include photo numbers here or on a separate she	et.)					
•						

(inches)		Matrix		Redox Features	- <u>-</u> .	. .
	Color (n		%	Color (moist) % Type 1 Loc ²	Texture	Remarks
0-5	10YR	3/2	100%		Loam	
5-16	10YR	4/6	100%		Fine Sandy Loam	
					<u></u>	
						_
Type: C=Cor	ncentration. D	=Depletio	n. RM=Red	uced Matrix, CS=Covered or Coated Sand Grains ² Loc	ation: PL=Pore Lining. M=I	Matrix
Hydric Soil	Indicators:				Indicators for Droh	lematic Hydric Soils : ³
Histosol				Polyvalue Below Surface (S8) (LRR R,		iematic riguite solis .
	ipedon (A2)			MLRA 149B)		(LRR K, L, MLRA 149B)
Black His				Thin Dark Surface (S9) (LRR R, MLRA 149B)		ox (A16) (LRR K, L, R)
	n Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)		or Peat (S3) (LRR K, L, R)
	Layers (A5)			Loamy Gleyed Matrix (F2)	Dark Surface (S7	
	Below Dark S	urface (A	11)	Depleted Matrix (F3)	Thin Dark Surface	Surface (S8) (LRR K, L)
	rk Surface (A1			Redox Dark Surface (F6)		
_	uck Mineral (S			Depleted Dark Surface (F7)		Masses (F12) (LRR K, L, R)
	leyed Matrix (S			Redox Depressions (F8)		ain Soils (F19) (MLRA 149B)
	edox (S5)				Red Parent Mater	6) (MLRA 144A, 145, 149B)
5						
Stripped	Matrix (S6)					
Stripped		R, MLRA	149B)		Very Shallow Dar	
Dark Sur	face (S7) (LRR			and hydrology must be present, unless disturbed or prob	Other (Explain in	
Dark Sur	face (S7) (LRR of hydrophytic	vegetatio		nd hydrology must be present, unless disturbed or prob	Other (Explain in	
Dark Sur	face (S7) (LRR	vegetatio		nd hydrology must be present, unless disturbed or prob	Other (Explain in	
Dark Sur ³ Indicators of Restrictive I Type:	face (S7) (LRR of hydrophytic .ayer (if obse	vegetatio erved):	n and wetla	nd hydrology must be present, unless disturbed or prob	Other (Explain in lematic.	Remarks)
Dark Sur ³ Indicators c Cestrictive L	face (S7) (LRR of hydrophytic .ayer (if obse	vegetatio erved):	n and wetla		Other (Explain in	
Dark Sur ³ Indicators of Restrictive I Type:	face (S7) (LRR of hydrophytic .ayer (if obse	vegetatio erved):	n and wetla		Other (Explain in lematic.	Remarks)
Dark Sur ³ Indicators c Restrictive I Type: Depth (ind	face (S7) (LRR of hydrophytic .ayer (if obse	vegetatio erved):	n and wetla		Other (Explain in lematic.	Remarks)
Dark Sur ³ Indicators c Restrictive I Type: Depth (ind	face (S7) (LRR of hydrophytic .ayer (if obse	vegetatio erved):	n and wetla		Other (Explain in lematic.	Remarks)
Dark Sur ³ Indicators c Restrictive I Type: Depth (ind	face (S7) (LRR of hydrophytic .ayer (if obse	vegetatio erved):	n and wetla		Other (Explain in lematic.	Remarks)
Dark Sur ³ Indicators c restrictive I Type: Depth (ind	face (S7) (LRR of hydrophytic .ayer (if obse	vegetatio erved):	n and wetla		Other (Explain in lematic.	Remarks)
Dark Sur ³ Indicators c estrictive L Type: Depth (ind	face (S7) (LRR of hydrophytic .ayer (if obse	vegetatio erved):	n and wetla		Other (Explain in lematic.	Remarks)
Dark Sur ³ Indicators c estrictive L Type: Depth (ind	face (S7) (LRR of hydrophytic .ayer (if obse	vegetatio erved):	n and wetla		Other (Explain in lematic.	Remarks)
Dark Sur ³ Indicators c estrictive L Type: Depth (ind	face (S7) (LRR of hydrophytic .ayer (if obse	vegetatio erved):	n and wetla		Other (Explain in lematic.	Remarks)
Dark Sur Indicators c estrictive L Type: Depth (ind	face (S7) (LRR of hydrophytic .ayer (if obse	vegetatio erved):	n and wetla		Other (Explain in lematic.	Remarks)
Dark Sur Indicators c estrictive I Type: Depth (ind	face (S7) (LRR of hydrophytic .ayer (if obse	vegetatio erved):	n and wetla		Other (Explain in lematic.	Remarks)
Dark Sur ³ Indicators c estrictive L Type: Depth (ind	face (S7) (LRR of hydrophytic .ayer (if obse	vegetatio erved):	n and wetla		Other (Explain in lematic.	Remarks)
Dark Sur ³ Indicators c restrictive I Type: Depth (ind	face (S7) (LRR of hydrophytic .ayer (if obse	vegetatio erved):	n and wetla		Other (Explain in lematic.	Remarks)
Dark Sur ³ Indicators c Restrictive I Type: Depth (ind	face (S7) (LRR of hydrophytic .ayer (if obse	vegetatio erved):	n and wetla		Other (Explain in lematic.	Remarks)
Dark Sur ³ Indicators c Restrictive I Type: Depth (ind	face (S7) (LRR of hydrophytic .ayer (if obse	vegetatio erved):	n and wetla		Other (Explain in lematic.	Remarks)
Dark Sur ³ Indicators c Restrictive I Type: Depth (ind	face (S7) (LRR of hydrophytic .ayer (if obse	vegetatio erved):	n and wetla		Other (Explain in lematic.	Remarks)
Dark Sur ³ Indicators c Restrictive I Type: Depth (ind	face (S7) (LRR of hydrophytic .ayer (if obse	vegetatio erved):	n and wetla		Other (Explain in lematic.	Remarks)
Dark Sur ³ Indicators c Restrictive I Type: Depth (ind	face (S7) (LRR of hydrophytic .ayer (if obse	vegetatio erved):	n and wetla		Other (Explain in lematic.	Remarks)
Dark Sur ³ Indicators c estrictive L Type: Depth (ind	face (S7) (LRR of hydrophytic .ayer (if obse	vegetatio erved):	n and wetla		Other (Explain in lematic.	Remarks)
Dark Sur Indicators c estrictive L Type: Depth (ind	face (S7) (LRR of hydrophytic .ayer (if obse	vegetatio erved):	n and wetla		Other (Explain in lematic.	Remarks)



AN26 Wetland



AN26 Upland

Project/Site: Antrim Wind Project		City/County:	City/County: Antrim			Sampling Date: 18-A		Aug-11	
Applicant/Owner: Eolian Renewable Energy, LLC				State:	NH	Sampling Point:	AN27 wet	land	
Investigator(s): AF JG		Section, Te	ownship, Ran	ige: S.	т	R.			
Landform (hillslope, terrace, etc.): Saddle		Local relief (c	oncave, conv	ex, none): undulating	g Slope:	8.0 % /	4.6°	
Subregion (LRR or MLRA):	Lat.:			Long.:		Dat	um:		
Soil Map Unit Name:		<u>la</u>		-	NWI classifi	cation: PFO			
	significant naturally	tly disturbed? problematic?	(If need	rmal Cir led, exp	•	resent? Yes		etc.	
Hydrophytic Vegetation Present? Yes ● No ○ Hydric Soil Present? Yes ● No ○ Wetland Hydrology Present? Yes ● No ○			e Sampled Are n a Wetland?		∕es ● No ○				
Remarks: (Explain alternative procedures here or in a sepa	arate repo	prt.)							

Wetland Hydrology Indicators:	Secondary Indicators (minimum of 2 required)			
Primary Indicators (minimum of one required; o	Surface Soil Cracks (B6)			
Surface Water (A1)	✓ Water-Stained Leaves (B9)	✓ Drainage Patterns (B10)		
✓ High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)		
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)		
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)		
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)		
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)		
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)		
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)		
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)		
Sparsely Vegetated Concave Surface (B8)		FAC-neutral Test (D5)		
Field Observations:				
Surface Water Present? Yes O No 🖲	Depth (inches):			
Water Table Present? Yes No	Depth (inches): <u>1</u>	drology Present? Yes 🔍 No 🔿		
Saturation Present? Yes • No ·	Depth (inches):0	drology Present? Yes • No 🔾		
Describe Recorded Data (stream gauge, monitor	ring well, aerial photos, previous inspections), if ava	ailable:		
Remarks:				

	int5	Dominant Species?		Sampling Point: AN27 wetland
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
				Number of Dominant Species
1. Picea mariana	50		FACW-	That are OBL, FACW, or FAC: <u>5</u> (A)
2. Acer rubrum	50	45.5%	FAC	Total Number of Dominant
3. Betula alleghaniensis		9.1%	FAC	Species Across All Strata: 5 (B)
4		0.0%		
5		0.0%		Percent of dominant Species That Are OBL, FACW, or FAC:100.0% (A/B)
6	0	0.0%		
7	0	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	110	= Total Cove	r	Total % Cover of: Multiply by:
1. Betula alleghaniensis	5	50.0%	FAC	$\begin{array}{ccc} \text{OBL species} & 0 & \text{x 1} = & 0 \\ \hline & 107 & & 0 \\ \hline \end{array}$
2. Picea mariana	_	50.0%	FACW-	FACW species 105 x 2 = 210
3.		0.0%		FAC species $65 \times 3 = 195$
4	0	0.0%		FACU species $0 \times 4 = 0$
н Б	0	0.0%		UPL species $0 \times 5 = 0$
56.				Column Totals: 170 (A) 405 (B)
a construction of the second se		0.0%		
7		0.0%		Prevalence Index = B/A = 2.382
Herb Stratum (Plot size: 5')	10	= Total Cove	r	Hydrophytic Vegetation Indicators:
1.Osmunda cinnamomea	50	✓ 100.0%	FACW	Rapid Test for Hydrophytic Vegetation
2.		0.0%		✓ Dominance Test is > 50%
3.	0			✓ Prevalence Index is ≤3.0 1
	0			Morphological Adaptations ¹ (Provide supporting
4 <u>.</u>	0	0.0%		data in Remarks or on a separate sheet)
5	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6	0	0.0%		1
7	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8	0	0.0%		
9	0	0.0%		Definitions of Vegetation Strata:
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0	0.0%		at breast height (DBH), regardless of height.
12	0	0.0%		Sepling/shrub Weedy plants less than 2 in DDU and
Woody Vine Stratum (Plot size:)	50	= Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
<u> </u>	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
0	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		
J	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in height.
4				light.
	0	= Total Cove		
				Hydrophytic
				Vegetation Present? Yes I No
	+ >			1
Remarks: (Include photo numbers here or on a separate she	eet.)			

Depth		Matrix	ie depth r		dox Features	iiirm the	absence of indicator	5.)	
(inches)	Color (n		%	Color (moist)	% Type 1	Loc ²	Texture	Remarks	
0-36	10YR	2/1					Mucky Peat	nemi c	
					· ·				
							-		
					· ·				
¹ Type: C=Cor	centration. D	Depletion.	RM=Redu	ced Matrix, CS=Covere	ed or Coated Sand Grai	ns ² Loca	ation: PL=Pore Lining.	M=Matrix	
Hydric Soil	Indicators:						Indicators for P	Problematic Hydric Soils : ³	
✓ Histosol ((A1)				w Surface (S8) (LRR R,			A10) (LRR K, L, MLRA 149B)	
	pedon (A2)			MLRA 149B)			_		
Black His				Thin Dark Surfa	ace (S9) (LRR R, MLRA	A 149B)		Redox (A16) (LRR K, L, R)	
	n Sulfide (A4)			🗌 Loamy Mucky I	Mineral (F1) LRR K, L)			Peat or Peat (S3) (LRR K, L, R)	
	Layers (A5)			Loamy Gleyed	Matrix (F2)			e (S7) (LRR K, L)	
	Below Dark S	urface (A11)	Depleted Matri	x (F3)		Polyvalue Below Surface (S8) (LRR K, L)		
_	rk Surface (A1		,	Redox Dark Su	rface (F6)			Irface (S9) (LRR K, L)	
_	uck Mineral (S			Depleted Dark	Surface (F7)		Iron-Manganese Masses (F12) (LRR K, L, R)		
	eyed Matrix (S			Redox Depress			_	oodplain Soils (F19) (MLRA 149B)	
		4)		·			Mesic Spodic (TA6) (MLRA 144A, 145, 149B)		
Sandy Re							Red Parent M	Naterial (TF2)	
_	Matrix (S6)						Very Shallow	Dark Surface (TF12)	
Dark Surf	face (S7) (LRR	R, MLRA 1	49B)				Other (Explai	in in Remarks)	
³ Indicators o	f hydrophytic	vegetation	and wetlar	d hydrology must be p	present, unless disturbe	d or probl	ematic.		
Restrictive L	aver (if obse	erved).							
Type:									
Depth (inc	aboc).						Hydric Soil Prese	nt? Yes \bullet No \bigcirc	
	ines):								
Remarks:									

Project/Site: Antrim Wind Project		City/County: Antrim		Sampling Date: 18-Aug-11	
Applicant/Owner: Eolian Renewable E	nergy, LLC	Sta	nte: NH	Sampling Point:	AN27 upland
Investigator(s): AF JG		Section, Township, Range:	S. T.	R.	
Landform (hillslope, terrace, etc.):	Hillside	Local relief (concave, convex, i	none): convex	Slope:	20.0 % / 11.3 °
Subregion (LRR or MLRA):	Lat.:	Lon	g.:	Dat	tum:
Soil Map Unit Name:			NWI classi	fication:	
Are Vegetation , Soil Are Vegetation , Soil Soil Summary of Findings - At	, or Hydrology 🗌 naturally p	problematic? (If needed,	If no, explain ir) I Circumstances" explain any answ ns, transects	present? Yes	
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes No Yes No Yes No No	Is the Sampled Area within a Wetland?	Yes 🔿 No 🤇	٥	
Remarks: (Explain alternative pro	cedures here or in a separate repo	ort.)			

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)
Primary Indicators (minimum of one required;	check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)		FAC-neutral Test (D5)
Field Observations:		
Surface Water Present? Yes O No 🖲	Depth (inches):	
Water Table Present? Yes O No 🖲	Depth (inches):	Iroloay Present? Yes 🔿 No 🖲
Saturation Present? Yes O No O	Depth (inches):	Irology Present? Yes 🔾 No 🖲
Describe Recorded Data (stream gauge, monito	pring well, aerial photos, previous inspections), if ava	ilable:
Remarks:		

	11.5	Dominant Species?		Sampling Point: AN27 upland
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
				Number of Dominant Species
1. Fagus grandifolia	20	28.6%	FACU	That are OBL, FACW, or FAC: 1 (A)
2. Quercus rubra		21.4%	FACU-	Total Number of Dominant
3. Betula papyrifera	20	28.6%	FACU	Species Across All Strata: 7 (B)
4. Picea rubens		21.4%	FACU	Percent of dominant Species
5	0	0.0%		That Are OBL, FACW, or FAC: <u>14.3%</u> (A/B)
6	0	0.0%		
7		0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	70	= Total Cove	r	Total % Cover of: Multiply by:
1. Fagus grandifolia	20	80.0%	FACU	OBL species0 $x \ 1 = 0$ FACW species0 $x \ 2 = 0$
2. Betula papyrifera	5	20.0%	FACU	
3.		0.0%		FAC species $2 \times 3 = 6$
4.	0	0.0%		FACU species $\frac{95}{2}$ x 4 = $\frac{380}{2}$
5	0	0.0%		UPL species $\underbrace{0}$ x 5 = $\underbrace{0}$
6	0	0.0%		Column Totals: 97 (A) 386 (B)
7	0	0.0%		Prevalence Index = $B/A = 3.979$
	25	= Total Cove	r	
Herb Stratum (Plot size: 5')				Hydrophytic Vegetation Indicators:
1.Acer rubrum	2	100.0%	FAC	
2	0	0.0%		 Dominance Test is > 50% Prevalence Index is ≤3.0¹
3	0	0.0%		
4	0	0.0%		Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6	0	0.0%		
7	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must
8	0	0.0%		be present, unless disturbed or problematic.
9	0	0.0%		Definitions of Vegetation Strata:
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0	0.0%		at breast height (DBH), regardless of height.
12	0	0.0%		Sopling/abrub Woody plants loss than 2 in DPH and
Woody Vine Stratum (Plot size:)	2	= Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
1				size, and woody plants less than 3.28 ft tall.
3	0	0.0%		
4	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in height.
4				neight.
	0	= Total Cove	ſ	
				Hydrophytic
				Vegetation Present? Yes No •
				Present? Yes V No 🛡
				I
Remarks: (Include photo numbers here or on a separate she	et.)			

(inches)		Matrix _		Redox Features		_ .
~ .	Color (m		%	Color (moist) % Type 1 Loc ²	Texture	Remarks
0-4	10YR	3/2	100%		Loam	
4-6	10YR	4/3	100%		Fine Sandy Loam	
6-11	10YR	5/6	100%		Fine Sandy Loam	
					<u>.</u>	
		Depletior	n. RM=Redu	uced Matrix, CS=Covered or Coated Sand Grains ² Loca	ation: PL=Pore Lining. M=N	atrix
Hydric Soil					Indicators for Probl	ematic Hydric Soils : ³
				Polyvalue Below Surface (S8) (LRR R, MLRA 149B)	2 cm Muck (A10)	(LRR K, L, MLRA 149B)
	pedon (A2)			Thin Dark Surface (S9) (LRR R, MLRA 149B)	Coast Prairie Redo	x (A16) (LRR K, L, R)
Black His	n Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)		or Peat (S3) (LRR K, L, R)
	Layers (A5)			Loamy Gleyed Matrix (F2)	Dark Surface (S7)	
	Below Dark Su	rface (A1	1)	Depleted Matrix (F3)		urface (S8) (LRR K, L)
_	rk Surface (A12			Redox Dark Surface (F6)	Thin Dark Surface	(S9) (LRR K, L) lasses (F12) (LRR K, L, R)
Sandy Mu	uck Mineral (S1))		Depleted Dark Surface (F7)		in Soils (F19) (MLRA 149B)
Sandy Gl	eyed Matrix (S4	ł)		Redox Depressions (F8)) (MLRA 144A, 145, 149B)
Sandy Re					Red Parent Materi	
	Matrix (S6)				Very Shallow Dark	
Dark Surf	face (S7) (LRR	r, mlra	149B)		Other (Explain in I	Remarks)
³ Indicators o	f hydrophytic v	egetatior	n and wetla	nd hydrology must be present, unless disturbed or proble	ematic.	
Restrictive L	ayer (if obser	rved):				
Type: st	ony					\bigcirc
Depth (inc	:hes): 11				Hydric Soil Present?	Yes 🔾 No 🖲
Remarks:						
Remarks:						
Remarks:						
Remarks:						
Remarks:						
Remarks:						
Remarks:						
Remarks:						
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Remarks:						



AN27 Upland



AN27 Wetland



AN27 Wetland



AN27 Wetland



AN27 Wetland



AN27 Upland

						0		
Project/Site: Antrim Wind Project	City/County:	Antrim	Antrim		Sampling Date: 22-Aug-11			
Applicant/Owner: Eolian Renewable E	Energy, LLC		S	tate: N	IH	Sampling Point:	AN30 we	tland
Investigator(s): AF JG		Section, To	ownship, Range	e: S.	т.	R.		
Landform (hillslope, terrace, etc.):	Footslope	Local relief (c	oncave, convex	, none):	concave	Slope:	3.0%/	1.7 '
Subregion (LRR or MLRA):	Lat.:		Lo	ng.:		Da	tum:	
Soil Map Unit Name:		<u>1</u> -			NWI classif	ication: PFO		
Are climatic/hydrologic conditions of Are Vegetation , Soil Are Vegetation , Soil Are Vegetation , Soil Summary of Findings - At	, or Hydrology Significan	tly disturbed? problematic?	(If needed	al Circu I, explai	•	ers in Remarks.)		etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes ● No ○ Yes ● No ○ Yes ● No ○ Yes ● No ○		e Sampled Area n a Wetland?	Ye	s 🖲 No C)		
Remarks: (Explain alternative pro Isolated PFO with ephemeral inlet	cedures here or in a separate report and outlet towards intermittant s	•						

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)		
Primary Indicators (minimum of one required; of	Surface Soil Cracks (B6)			
Surface Water (A1)	Surface Water (A1) Water-Stained Leaves (B9)			
High Water Table (A2)	Aquatic Fauna (B13)	Drainage Patterns (B10) Moss Trim Lines (B16)		
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)		
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)		
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)		
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)		
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)		
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aguitard (D3)		
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)		
Sparsely Vegetated Concave Surface (B8)		✓ FAC-neutral Test (D5)		
		_ 、 /		
Field Observations:				
Surface Water Present? Yes O No 🖲	Depth (inches):			
Water Table Present? Yes O No 🖲	Depth (inches):			
Saturation Present? Yes O No •	Wetland Hyd Depth (inches):	drology Present? Yes $ullet$ No $igloo$		
Describe Recorded Data (stream gauge, monito	ring well, aerial photos, previous inspections), if ava	ailable:		
Remarks:				

		Dominant Species?		Sampling Point: AN30 wetland
Tree Stratum (Plot size:)	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
<u> </u>	0	0.0%		Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)
2.	0	0.0%		
3.	0	0.0%		Total Number of Dominant
3	0	0.0%		Species Across All Strata: (B)
4				Percent of dominant Species
5				That Are OBL, FACW, or FAC: 75.0% (A/B)
6		0.0%		
7	0	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	0	= Total Cove	ſ	Total % Cover of: Multiply by: 0BL species 0 x 1 = 0
1. Betula alleghaniensis	10	✓ 50.0%	FAC	FACW species $35 \times 2 = 70$
2. Fraxinus pennsylvanica	10	50.0%	FACW	
3	0	0.0%		
4	0	0.0%		
5	0	0.0%		UPL species x 5 =
6.	0	0.0%		Column Totals: 70 (A) 225 (B)
7	0	0.0%		Prevalence Index = $B/A = 3.214$
1	-	= Total Cove		
Herb Stratum (Plot size: 5')	20			Hydrophytic Vegetation Indicators:
1. Onoclea sensibilis	25	✓ 50.0%	FACW	Rapid Test for Hydrophytic Vegetation
2.Polygonatum pubescens	25	✓ 50.0%	UPL	✓ Dominance Test is > 50%
3	0	0.0%		□ Prevalence Index is \leq 3.0 ¹
4.				Morphological Adaptations ¹ (Provide supporting
5.	0			data in Remarks or on a separate sheet)
	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6	0	0.0%		
7	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8	0	0.0%		
9.	0	0.0%		Definitions of Vegetation Strata:
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0	0.0%		at breast height (DBH), regardless of height.
12.	0	0.0%		Conling/ohr/h. Weady plants less than 2 in DBU and
Woody Vine Stratum (Plot size:)	50	= Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
0	0	0.0%		size, and woody plants less than 3.28 ft tall.
2 3	0	0.0%		
۵ ۸	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in height.
4				neight.
	0	= Total Cove	ſ	
				Hydrophytic Vegetation
				Present? Yes I No
Remarks: (Include photo numbers here or on a separate she	et)			
Remarks. (menuce proto numbers here of on a separate sile	,			

Depth		Matrix		needed to document the indicator or confirm the Redox Features		
(inches)	Color (m	noist)	%	Color (moist) % Type 1 Loc ²	Texture	Remarks
0-8	10YR	3/2	100%		Loam	
8-16	2.5Y	5/1	100%		Loamy Sand	
				·		
				·		
				·		
				·		
1 Turnov C. Con		Doplatia	DM Dog	luced Matrix CS Covered or Costed Sand Crains 21 ac	tion: DL Doro Lining M L	
		-nehierio	. RIVI=ReC	luced Matrix, CS=Covered or Coated Sand Grains ² Loca		
Hydric Soil	Indicators:			Polyvalue Below Surface (S8) (LRR R,		lematic Hydric Soils : ³
	(AT) ipedon (A2)			MLRA 149B)		(LRR K, L, MLRA 149B)
Black His				Thin Dark Surface (S9) (LRR R, MLRA 149B)		ox (A16) (LRR K, L, R)
	n Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)		or Peat (S3) (LRR K, L, R)
_	Layers (A5)			Loamy Gleyed Matrix (F2)	Dark Surface (S7	
_	Below Dark Su	urface (A	.11)	Depleted Matrix (F3)		Surface (S8) (LRR K, L) e (S9) (LRR K, L)
Thick Da	rk Surface (A12	2)		Redox Dark Surface (F6)		Masses (F12) (LRR K, L, R)
Sandy M	uck Mineral (S1)		Depleted Dark Surface (F7)		lain Soils (F19) (MLRA 149B)
Sandy G	leyed Matrix (S	4)		Redox Depressions (F8)		6) (MLRA 144A, 145, 149B)
Sandy R	edox (S5)				Red Parent Mater	
Stripped	Matrix (S6)				Very Shallow Dar	
Dark Sur	face (S7) (LRR	r, mlra	A 149B)		Other (Explain in	
³ Indicators of	of hydrophytic v	vegetatio	n and wetl	and hydrology must be present, unless disturbed or probl	ematic.	
Restrictive	Layer (if obse	rved):				
Туре:						
Depth (in	ches).				Hydric Soil Present?	Yes 🔍 No 🔾
Remarks:						

Project/Site: Antrim Wind Project		City/County: Antrin	n		Sampling Date: 2	2-Aug-11	
Applicant/Owner: Eolian Renewable E	nergy, LLC		State	e: NH	Sampling Point:	AN30 up	land
Investigator(s): AF JG		Section, Townsh	ip, Range: S	. т.	R.		
Landform (hillslope, terrace, etc.):	Footslope	Local relief (concave	e, convex, no	ne): flat	Slope:	3.0%/	1.7 °
Subregion (LRR or MLRA):	Lat.:		Long.	:	Dat	um:	
Soil Map Unit Name:				NWI classi	fication:		
Are climatic/hydrologic conditions of Are Vegetation, Soil Are Vegetation, Soil Summary of Findings - At	, or Hydrology Significant	tly disturbed? A problematic? (re "Normal (If needed, ea		present? Yes		etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes ○ No ● Yes ○ No ● Yes ○ No ●	Is the Samp within a We		Yes 🔿 No 🤆			
Remarks: (Explain alternative pro	cedures here or in a separate repo	rt.)					

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)
Primary Indicators (minimum of one required;	check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2)	 Oxidized Rhizospheres along Living Roots (C3) 	Saturation Visible on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aguitard (D3)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)		FAC-neutral Test (D5)
Field Observations:		
Surface Water Present? Yes O No 💿	Depth (inches):	
Water Table Present? Yes O No •	Depth (inches):	drology Present? Yes 🔿 No 🖲
Saturation Present? (includes capillary fringe) Yes O No O	Wetland Hyd Depth (inches):	drology Present? Yes 🔾 No 🖲
Describe Recorded Data (stream gauge, monit	oring well, aerial photos, previous inspections), if ava	ailable:
Remarks:		

	111.5	Dominant Species?		Sampling Point: AN30 upland
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
	25	31.3%	FACU	Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)
	15	18.8%	FACU-	
0		31.3%	FACU-	Total Number of Dominant
A Batala allo at anti-	45	18.8%	FAC	Species Across All Strata: 8 (B)
4. Betula alleghaniensis		0.0%	FAC	Percent of dominant Species
5	0	0.0%		That Are OBL, FACW, or FAC: 12.5% (A/B)
6				
7		0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: <u>15</u>)	80	= Total Cove	r	Total % Cover of: Multiply by:
1. Fagus grandifolia	10	40.0%	FACU	OBL species $0 \times 1 = 0$
2. Pinus strobus		20.0%	FACU	FACW species $0 \times 2 = 0$
		20.0%	FACU-	FAC speci es $30 \times 3 = 90$
1		20.0%	FACU	FACU speci es 109 x 4 = 436
-		0.0%		UPL species $0 \times 5 = 0$
<u>^</u>		0.0%		Column Totals: 139 (A) 526 (B)
7		0.0%		·
<i>I</i>				Prevalence Index = B/A = <u>3.784</u>
Herb Stratum (Plot size: 5')	25	= Total Cove	r	Hydrophytic Vegetation Indicators:
1.Maianthemum canadense	10	29.4%	FAC-	Rapid Test for Hydrophytic Vegetation
2 Analia mudiaaulia	15	44.1%	FACU	Dominance Test is > 50%
2 -		8.8%	FACU	□ Prevalence Index is \leq 3.0 ¹
1		2.9%	FACU	Morphological Adaptations ¹ (Provide supporting
5 		14.7%	FAC	data in Remarks or on a separate sheet)
6.	0	0.0%	TAC	Problematic Hydrophytic Vegetation ¹ (Explain)
7				¹ Indicators of hydric soil and wetland hydrology must
8.				be present, unless disturbed or problematic.
9.				Definitions of Vegetation Strata:
9 <u>.</u> 10.	0	0.0%		
10 <u>.</u> 11.		0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
12.		0.0%		at breast height (DBH), regardless of height.
12	0	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)	34	= Total Cove	r	greater than 3.28 ft (1m) tall
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0	0.0%		height.
	0	= Total Cove	r	
				Hydrophytic
				Vegetation Present? Yes O No •
				Fresent:
				1
Remarks: (Include photo numbers here or on a separate she	eet.)			

(inches)	Matrix		Redox Features		
	Color (moist)		Color (moist) % Type 1 Loc ²	Texture	Remarks
0-8	10YR 3/2	100%		Loam	
8-12	10YR 4/3	100%		Loamy Sand	
				<u>.</u>	
¹ Type: C=Cor	centration. D=Deplet	ion. RM=Red	uced Matrix, CS=Covered or Coated Sand Grains ² Loca	ation: PL=Pore Lining. M=N	latrix
Hydric Soil				-	ematic Hydric Soils : ³
Histosol (Polyvalue Below Surface (S8) (LRR R,		(LRR K, L, MLRA 149B)
Histic Epi	pedon (A2)		MLRA 149B)		ox (A16) (LRR K, L, R)
Black His	tic (A3)		Thin Dark Surface (S9) (LRR R, MLRA 149B)		or Peat (S3) (LRR K, L, R)
	n Sulfide (A4)		Loamy Mucky Mineral (F1) LRR K, L)	Dark Surface (S7)	
	Layers (A5)		Loamy Gleyed Matrix (F2)		urface (S8) (LRR K, L)
	Below Dark Surface (A11)	Redox Dark Surface (F6)	Thin Dark Surface	(S9) (LRR K, L)
	rk Surface (A12)		Depleted Dark Surface (F7)	Iron-Manganese N	Nasses (F12) (LRR K, L, R)
	uck Mineral (S1)		Redox Depressions (F8)	Piedmont Floodpla	ain Soils (F19) (MLRA 149B)
Sandy G	eyed Matrix (S4)				5) (MLRA 144A, 145, 149B)
	Matrix (S6)			Red Parent Mater	
	face (S7) (LRR R, MLR	A 149B)		Very Shallow Dark	
				Other (Explain in	Remarks)
-Indicators o	r nydropnytic vegetati		nd hydrology must be present, unless disturbed or probl		
Restrictive L	ayer (if observed):				
Restrictive L Type: b	ouldery			Hydric Soil Present?	
Restrictive L	ouldery			Hydric Soil Present?	Yes 🔿 No 🖲
Restrictive L Type: _b	ouldery			Hydric Soil Present?	Yes 🔍 No 🖲
Restrictive L Type: <u>b</u> Depth (inc	ouldery			Hydric Soil Present?	Yes 🔿 No 🖲
Restrictive L Type: <u>b</u> Depth (inc	ouldery			Hydric Soil Present?	Yes 🔿 No 🖲
Restrictive L Type: <u>b</u> Depth (inc	ouldery			Hydric Soil Present?	Yes 🔾 No 🖲
Restrictive L Type: <u>b</u> Depth (inc	ouldery			Hydric Soil Present?	Yes 🔿 No 🖲
Restrictive L Type: <u>b</u> Depth (inc	ouldery			Hydric Soil Present?	Yes 🔿 No 🖲
Restrictive L Type: <u>b</u> Depth (inc	ouldery			Hydric Soil Present?	Yes 🔿 No 🖲
Restrictive L Type: <u>b</u> Depth (inc	ouldery			Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>b</u> Depth (inc	ouldery			Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>b</u> Depth (inc	ouldery			Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>b</u> Depth (inc	ouldery			Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>b</u> Depth (inc	ouldery			Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>b</u> Depth (inc	ouldery			Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>b</u> Depth (inc	ouldery			Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>b</u> Depth (inc	ouldery			Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>b</u> Depth (inc	ouldery			Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>b</u> Depth (inc	ouldery			Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>b</u> Depth (inc	ouldery			Hydric Soil Present?	Yes O No O



AN30 Wetland



AN30 Upland

Project/Site: Antrim Wind Project		City/County: Antrim			Sampling Date: 2	2-Aug-11	
Applicant/Owner: Eolian Renewable E	inergy, LLC	S	state: NH		Sampling Point:	AN31 We	tland
Investigator(s): AF JG		Section, Township, Range	e: S.	т.	R.		
Landform (hillslope, terrace, etc.):	Terrace	Local relief (concave, convex	a, none) : flat		Slope:	2.0 % /	1.1 °
Subregion (LRR or MLRA):	Lat.:	Lo	ong.:		Dat	um:	
Soil Map Unit Name:			NWI c	lassifi	cation: PSS		
Are climatic/hydrologic conditions of Are Vegetation , Soil Are Vegetation , Soil Summary of Findings - At	, or Hydrology Significant	tly disturbed? Are "Norm problematic? (If needed		ces" pi answe	resent? Yes (rs in Remarks.)		etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes ● No ○ Yes ● No ○ Yes ● No ○	Is the Sampled Area within a Wetland?	Yes 🖲 I	No O			
	ocedures here or in a separate repo nin maintained transmission line RC						

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)		
Primary Indicators (minimum of one require	Surface Soil Cracks (B6)			
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)		
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)		
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)		
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)		
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)		
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)		
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)		
Iron Deposits (B5)				
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)		
Sparsely Vegetated Concave Surface (B8)		✓ FAC-neutral Test (D5)		
		_ 、 , ,		
Field Observations:				
Surface Water Present? Yes O No	Depth (inches):			
Water Table Present? Yes O No				
Saturation Present? Yes Solution View Solution Present? Yes Solution No Contract Solution Present?	Depth (inches): 2	-lydrology Present? Yes $ullet$ No $igodoldsymbol{ imes}$		
Describe Recorded Data (stream gauge, mor	nitoring well, aerial photos, previous inspections), if a	available:		
Remarks:				

	11.5	Dominant Species?		Sampling Point: AN31 Wetland
Tree Stratum (Plot size:)	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
1	0	0.0%		Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)
2.	0	0.0%		
3.	0	0.0%		Total Number of Dominant Species Across All Strata: 4 (B)
4	0	0.0%		Species Across All Strata: (B)
5		0.0%		Percent of dominant Species
6		0.0%		That Are OBL, FACW, or FAC:(A/B) (A/B)
7	0	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')		= Total Cove	r	Total % Cover of: Multiply by:
1. Acer rubrum	10	25.0%	FAC	OBL species 18 x 1 = 18
O transfer Benefative	5	12.5%	FACW	FACW species X 2 =176
0		 ✓ 62.5% 	FACW+	FAC species $10 \times 3 = 30$
		0.0%	TACW+	FACU species $15 \times 4 = 60$
		0.0%		UPL species x 5 =
5	0	0.0%		Column Totals: 131 (A) 284 (B)
6				
<i>I</i>	0	0.0%		Prevalence Index = $B/A = 2.168$
Herb Stratum (Plot size: 5')	40	= Total Cove	r	Hydrophytic Vegetation Indicators:
1.Scirpus cyperinus	8	8.8%	FACW+	Rapid Test for Hydrophytic Vegetation
2.Onoclea sensibilis	25	27.5%	FACW	✓ Dominance Test is > 50%
3.Carex crinita	5	5.5%	OBL	✓ Prevalence Index is ≤3.0 1
4.Carex lurida	5	5.5%	OBL	Morphological Adaptations ¹ (Provide supporting
5 outrout the structure		8.8%	OBL	data in Remarks or on a separate sheet)
6				Problematic Hydrophytic Vegetation ¹ (Explain)
	15	16.5%✓ 27.5%	FACU	¹ Indicators of hydric soil and wetland hydrology must
7.Rubus hispidus 8.			FACW	be present, unless disturbed or problematic.
8 <u>.</u> 9.	0			Definitions of Vegetation Strata:
9. 10.	0			
11.	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
12.	0	0.0%		at breast height (DBH), regardless of height.
12	0	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)	91	= Total Cove	r	greater than 3.28 ft (1m) tall
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2		0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0	0.0%		height.
	0	= Total Cove	r	
				Hydrophytic Vegetation Present? Yes • No O
Remarks: (Include photo numbers here or on a separate shee	et.)			

Depth		Matrix	ane depth			edox Featu			absence of indicators.)	
(inches)	Color (%	Color (~ %		Loc ²	Texture	Remarks
0-8	10YR	3/2							Loam	
8-16	2.5Y	4/1	90%	10YR	5/8	10%	С	М	Fine Sandy Loam	
						_				
						_				
						_				
									·	
¹ Type: C=Co	ncentration. D	D=Depletio	n. RM=Red	uced Matrix,	CS=Cover	red or Coate	ed Sand Gra	ains ² Loca	ation: PL=Pore Lining. M=N	<i>N</i> atrix
_	Indicators:			_					Indicators for Probl	ematic Hydric Soils : ³
Histosol				Poly	value Belc A 149B)	ow Surface ((S8) (LRR F	R,	2 cm Muck (A10)	(LRR K, L, MLRA 149B)
	ipedon (A2)					face (S9) (I		2Δ 149R)	Coast Prairie Red	ox (A16) (LRR K, L, R)
Black His						Mineral (F1			5 cm Mucky Peat	or Peat (S3) (LRR K, L, R)
	n Sulfide (A4))				Matrix (F2)			Dark Surface (S7)) (LRR K, L)
	l Layers (A5) I Below Dark S	Surface (A	11)		leted Matr					Surface (S8) (LRR K, L)
_	rk Surface (A		11)			urface (F6)			Thin Dark Surface	
	uck Mineral (S			_		Surface (F	7)			Masses (F12) (LRR K, L, R)
_	leyed Matrix (Red	ox Depres	sions (F8)			_	ain Soils (F19) (MLRA 149B)
_	edox (S5)	(34)								6) (MLRA 144A, 145, 149B)
	Matrix (S6)								Red Parent Mater	• •
_	face (S7) (LR	R R, MLRA	149B)						Very Shallow Darl	
³ Indicators (of hydrophytic	voqotatio	n and woth	and bydrology	, must bo	procont un	loss disturk	od or prob		
				ind nyurology	must be	present, un				
Restrictive	ayer (if obs	served):								
Туре:									Hydric Soil Present?	Yes 🔍 No 🔾
Depth (in	ches):									
Remarks:										

Project/Site: Antrim Wind Project		City/County: Antrim		Sampling Date: 2	2-Aug-11
Applicant/Owner: Eolian Renewable E	inergy, LLC	St	tate: NH	Sampling Point:	AN31 Upland
Investigator(s): AF JG		Section, Township, Range	: S. T.	R.	
Landform (hillslope, terrace, etc.):	Undulating	Local relief (concave, convex,	none): undulatin	g Slope:	5.0 % / 2.9°
Subregion (LRR or MLRA):	Lat.:	Lo	ng.:	Dat	um:
Soil Map Unit Name:			NWI classif	ication:	
Are climatic/hydrologic conditions of Are Vegetation , Soil Are Vegetation , Soil Summary of Findings - At	, or Hydrology Significant	tly disturbed? Are "Norm: problematic? (If needed	(If no, explain in al Circumstances" p , explain any answo ns, transects,	ers in Remarks.)	
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes ○ No ● Yes ○ No ● Yes ○ No ●	Is the Sampled Area within a Wetland?	Yes 🔿 No 🖲)	
Remarks: (Explain alternative pro Transmission line maintained ROV	ocedures here or in a separate repo V	rt.)			

Wetland Hydrology Indicators:					
5 00	shook all that apply)	Secondary Indicators (minimum of 2 required)			
Primary Indicators (minimum of one required; c		Surface Soil Cracks (B6)			
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)			
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)			
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)			
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)			
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)			
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)			
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)			
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)			
Inundation Visible on Aerial Imagery (B7)		Microtopographic Relief (D4)			
Sparsely Vegetated Concave Surface (B8)		FAC-neutral Test (D5)			
Field Observations:					
Surface Water Present? Yes O No O	Depth (inches):				
Water Table Present? Yes O No 🖲	Depth (inches):				
Saturation Present? (includes capillary fringe) Yes O No •	Wetland Hyd Depth (inches):	drology Present? YES 🔾 NO 🖲			
Describe Recorded Data (stream gauge, monitor	ring well, aerial photos, previous inspections), if ava	ailable:			
Remarks:					
 ☐ Inundation Visible on Aerial Imagery (B7) ☐ Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No ● Water Table Present? Yes No ● Saturation Present? Yes No ● Saturation Present? Yes No ● Describe Recorded Data (stream gauge, monitor 	Depth (inches): Wetland Hyd	Microtopographic Relief (D4) FAC-neutral Test (D5) Grology Present? Yes No			

	11.5	Dominant Species?		Sampling Point: AN31 Upland
Tree Stratum (Plot size:)	Absolute % Cover		Indicator Status	Dominance Test worksheet:
	0	0.0%		Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)
2.	0	0.0%		
				Total Number of Dominant
3	0	0.0%		Species Across All Strata: 4 (B)
4		0.0%		Dercent of dominant Species
5		0.0%		Percent of dominant Species That Are OBL, FACW, or FAC:25.0% (A/B)
6		0.0%		
7	0	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')		= Total Cove	r	Total % Cover of:Multiply by:OBL species0x 1 =
1. Populus tremula	10	47.6%	FACU	
2. Prunus serotina	3	14.3%	FACU	
3. Acer saccharum	5	23.8%	FACU-	
4. Quercus rubra		14.3%	FACU-	FACU species $\frac{86}{344}$ x 4 = $\frac{344}{344}$
5		0.0%		UPL species x 5 =
C		0.0%	-	Column Totals: 124 (A) 420 (B)
7	0	0.0%		
<i>I</i>	-			Prevalence Index = B/A = <u>3.387</u>
Herb Stratum (Plot size: 5')	21	= Total Cove	r	Hydrophytic Vegetation Indicators:
1.Rubus alumnus	15	14.6%	FACU-	Rapid Test for Hydrophytic Vegetation
2.Solidago canadensis	50	48.5%	FACU	Dominance Test is > 50%
3.Onoclea sensibilis			-	□ Prevalence Index is \leq 3.0 ¹
P			FACW	Morphological Adaptations ¹ (Provide supporting
4.Spiraea alba	5	4.9%	FACW+	data in Remarks or on a separate sheet)
5	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6	0	0.0%		1
7	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8	0	0.0%		
9	0	0.0%		Definitions of Vegetation Strata:
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0	0.0%		at breast height (DBH), regardless of height.
12.	0	0.0%		Orall's states to Manda states to be a three of the DDU and
Woody Vine Stratum (Plot size:)	103	= Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
<u> </u>	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
0	0	0.0%		size, and woody plants less than 3.28 ft tall.
2 3	0	0.0%		
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in height.
7				noight.
	0	= Total Cove	r	
				Hydrophytic
				Vegetation
				Present? Yes No •
Remarks: (Include photo numbers here or on a separate she	et.)			

Depth		Matrix	-	needed to document the indicator or confirm the Redox Features		
(inches)	Color (%	Color (moist) % Type 1 Loc		Remarks
0-7	10YR	3/2	100%	·	Loam	
7-12	10YR	4/3	100%		Sandy Loam	
12-16	2.5Y	5/1	100%		Medium Sand	
16-24	10YR	4/6	100%		Sandy Loam	_
						_
				·		
				·		
				·		
		D=Depletic	n. RM=Red	luced Matrix, CS=Covered or Coated Sand Grains ² L	ocation: PL=Pore Lining. M=I	Matrix
Hydric Soil					Indicators for Prob	lematic Hydric Soils : ³
				Polyvalue Below Surface (S8) (LRR R, MLRA 149B)		(LRR K, L, MLRA 149B)
	ipedon (A2)			Thin Dark Surface (S9) (LRR R, MLRA 149B)	Coast Prairie Red	lox (A16) (LRR K, L, R)
Black His	n Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)	5 cm Mucky Peat	or Peat (S3) (LRR K, L, R)
	I Layers (A5)			Loamy Gleyed Matrix (F2)	Dark Surface (S7	
	Below Dark	Surface (A	.11)	Depleted Matrix (F3)		Surface (S8) (LRR K, L)
_	rk Surface (A			Redox Dark Surface (F6)		e (S9) (LRR K, L) Masses (F12) (LRR K, L, R)
Sandy M	uck Mineral (S	S1)		Depleted Dark Surface (F7)		lain Soils (F19) (MLRA 149B)
Sandy G	leyed Matrix ((S4)		Redox Depressions (F8)		6) (MLRA 144A, 145, 149B)
Sandy R	edox (S5)				Red Parent Mater	
	Matrix (S6)				Very Shallow Dar	. ,
Dark Sur	face (S7) (LR	R R, MLRA	A 149B)		Other (Explain in	Remarks)
³ Indicators of	of hydrophytic	vegetatio	n and wetla	and hydrology must be present, unless disturbed or pr	oblematic.	
Restrictive I	_ayer (if obs	served):				
Type:	-				_	
Depth (in	ches):				Hydric Soil Present?	Yes 🔾 No 🖲
Remarks:						



AN31 Wetland



AN31 Upland



AN31 Wetland

Project/Site: Antrim Wind Project		City/County:	Antrim				Sampling Date: 2	2-Aug-11	
Applicant/Owner: Eolian Renewable E	Energy, LLC		S	tate:	NH		Sampling Point:	AN32 we	tland
Investigator(s): AF JG		Section, T	ownship, Range	e: S.		т.	R.		
Landform (hillslope, terrace, etc.):	Footslope	Local relief (c	oncave, convex	, none	e): flat	_	Slope:	0.0%/	0.0
Subregion (LRR or MLRA):	Lat.:		Lo	ng.:			Da	um:	
Soil Map Unit Name:				-	NWI c	assif	ication: PSS		
Are Vegetation , Soil Are Vegetation , Soil Soil Summary of Findings - At	, or Hydrology 🗌 naturally	tly disturbed? problematic? sampling p	•	l, expl	ain any a	Inswe	ers in Remarks.)		etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes ● No ○ Yes ● No ○ Yes ● No ○		e Sampled Area n a Wetland?	Ŷ	′es 🖲 N	lo C)		
	ncedures here or in a separate repo nin maintained transmission line R	•							

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)		
Primary Indicators (minimum of one required;	Surface Soil Cracks (B6)			
Surface Water (A1)	Water-Stained Leaves (B9)	✓ Drainage Patterns (B10)		
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)		
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)		
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)		
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)		
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)		
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)		
Iron Deposits (B5)				
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)		
Sparsely Vegetated Concave Surface (B8)		✓ FAC-neutral Test (D5)		
Field Observations:				
Surface Water Present? Yes O No 🖲	Depth (inches):			
Water Table Present? Yes O No O	Depth (inches):	× •		
Saturation Present? Yes • No ·	Depth (inches): 2 Wetland Hy	/drology Present? Yes 🖲 No 🔾		
Describe Recorded Data (stream gauge, monito	pring well, aerial photos, previous inspections), if av	vailable:		
Remarks:				

		Dominant Species?		Sampling Point: AN32 wetland
Tree Stratum (Plot size:)	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
1	0	0.0%		Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)
0	0	0.0%		
		0.0%		Total Number of Dominant
3				Species Across All Strata: 4 (B)
4	0	0.0%		Dercent of dominant Species
5		0.0%		Percent of dominant Species That Are OBL, FACW, or FAC:75.0% (A/B)
6		0.0%		
7	0	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	0	= Total Cove	r	Total % Cover of: Multiply by: OBL species 12 x 1 = 12
1. Spiraea alba	50	83.3%	FACW+	·
2. Acer rubrum	10	16.7%	FAC	FACW species $108 \times 2 = 216$
3.	0	0.0%		FAC species $10 \times 3 = 30$
4		0.0%		FACU species 25 x 4 = 100
		0.0%		UPL species x 5 =
5				Column Totals: 155 (A) 358 (B)
6		0.0%		
/	0	0.0%		Prevalence Index = $B/A = 2.310$
Herb Stratum (Plot size: 5')	60	= Total Cove	r	Hydrophytic Vegetation Indicators:
1.Carex crinita	12	12.6%	OBL	Rapid Test for Hydrophytic Vegetation
2.Onoclea sensibilis	33	34.7%	FACW	✓ Dominance Test is > 50%
3 Carray Intermediate		26.3%	FACW+	\checkmark Prevalence Index is ≤3.0 ¹
P				Morphological Adaptations ¹ (Provide supporting
4. Rubus hispidus	0	0.0%	FACW	data in Remarks or on a separate sheet)
5. Solidago canadensis	25	26.3%	FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
6	0	0.0%		
7	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8.	0	0.0%		
9.	0	0.0%		Definitions of Vegetation Strata:
10.	0	0.0%		
11.	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
12.	0	0.0%		at broadt height (DDH), regardloss of height.
		= Total Cove		Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
Woody Vine Stratum (Plot size:) 1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
0	0			size, and woody plants less than 3.28 ft tall.
2	0	0.0%		
3				Woody vine - All woody vines greater than 3.28 ft in
4	0	0.0%		height.
	0	= Total Cove	r	
				Hydrophytic
				Vegetation Present? Yes No
Remarks: (Include photo numbers here or on a separate she	et.)			

Depth	_	Matrix	_			dox Featu			_	
(inches)	Color (I	moist)	%	Color (moist)	%	Type 1	Loc ²	Texture	Remarks
0-18	10YR	3/2	100%						Loam	_
18-24	2.5Y	4/2	95%	10YR	5/8	5%	С	М	Sandy Loam	
¹ Type: C=Cor	ncentration. D	=Depletio	n. RM=Red	uced Matrix,	CS=Cover	ed or Coate	ed Sand Gra	ains ² Loca	ation: PL=Pore Lining. M=N	/atrix
Hydric Soil	Indicators:	-							Indiantors for Drob	ematic Hydric Soils · ³
Histosol				Polv	value Belo	w Surface ((S8) (LRR R			enatic rigane sons .
	ipedon (A2)			MLR	A 149B)		, .=	-		(LRR K, L, MLRA 149B)
Black His	•			🗌 Thin	Dark Surf	ace (S9) (I	lrr r, mlr	A 149B)		DX (A16) (LRR K, L, R)
	n Sulfide (A4)			🗌 Loar	ny Mucky	Mineral (F1) LRR K, L)			or Peat (S3) (LRR K, L, R)
	Layers (A5)			Loar	ny Gleyed	Matrix (F2))		Dark Surface (S7)	
	Below Dark S	Surface (A	.11)	Dep	leted Matr	ix (F3)			Thin Dark Surface	Surface (S8) (LRR K, L)
_	rk Surface (A1			_		urface (F6)				9 (39) (LRR K, L) Masses (F12) (LRR K, L, R)
_	uck Mineral (S					Surface (F	7)			ain Soils (F19) (MLRA 149B)
	leyed Matrix (Red	ox Depres	sions (F8)				6) (MLRA 144A, 145, 149B)
	edox (S5)								Red Parent Mater	
Stripped	Matrix (S6)								Very Shallow Dar	. ,
Dark Sur	face (S7) (LRI	r R, MLRA	A 149B)						Other (Explain in	
³ Indicators (of hydrophytic	voqotatio	n and wotla	nd hydrology	must bo	prosont un	loss disturb	od or prob		Nema N3)
				na nyarology	must be	present, un				
	ayer (if obs	erved):								
Туре:									Hydric Soil Present?	Yes 💿 No 🔿
Depth (in	ches):								Hydric Soli Present?	
Remarks:										

Project/Site: Antrim Wind Project		City/County: Antrim			Sampling Date: 2	22-Aug-11	
Applicant/Owner: Eolian Renewable E	nergy, LLC		State:	NH	Sampling Point:	AN32 up	land
Investigator(s): AF JG		Section, Township, Rang	ge: S.	т.	R.		
Landform (hillslope, terrace, etc.):	Undulating	Local relief (concave, conve	x, non	e): undulatir	ng Slope:	8.0 % /	4.6 °
Subregion (LRR or MLRA):	Lat.:	L	ong.:		Da	tum:	
Soil Map Unit Name:				NWI classi	fication:		
Are Vegetation . , Soil . Are Vegetation . , Soil . Soil . Summary of Findings - At	, or Hydrology 🗌 naturally p	problematic? (If neede	ed, exp	2	vers in Remarks.)		etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes No Yes No Yes No No	Is the Sampled Are within a Wetland?	a ,	Yes 🔿 No 🤇			
Remarks: (Explain alternative proc	edures here or in a separate repo	ort.)					

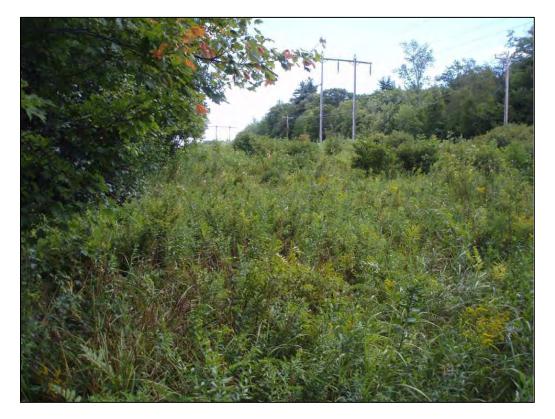
	Secondary Indicators (minimum of 2 required)
check all that apply)	Surface Soil Cracks (B6)
Water-Stained Leaves (B9)	Drainage Patterns (B10)
Aquatic Fauna (B13)	Moss Trim Lines (B16)
Marl Deposits (B15)	Dry Season Water Table (C2)
Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)
Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)
Thin Muck Surface (C7)	Shallow Aquitard (D3)
	Microtopographic Relief (D4)
	FAC-neutral Test (D5)
Depth (inches):	
Depth (inches):	rdrology Present? Yes 🔿 No 🖲
Wetland Hy Depth (inches):	rdrology Present? Yes 🔾 No 🖲
pring well, aerial photos, previous inspections), if av	ailable:
	Aquatic Fauna (B13) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Thin Muck Surface (C7) Other (Explain in Remarks) Depth (inches): Depth (inches): Uepth (inches):

		Dominant Species?		Sampling Point: AN32 upland
Tree Stratum (Plot size:)	Absolute % Cover		Indicator Status	Dominance Test worksheet:
1	0	0.0%		Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)
2.		0.0%		
3.		0.0%		Total Number of Dominant
3		0.0%		Species Across All Strata: <u>3</u> (B)
4		0.0%		Percent of dominant Species
5		0.0%		That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)
6				
7		0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	0	= Total Cover	-	Total % Cover of: Multiply by: 0BL species 10 x 1 = 10
1. Rhus copallinum	50	✔ 76.9%	NI	· <u> </u>
2. Pinus strobus	5	7.7%	FACU	FACW species $33 \times 2 = 66$
3. Prunus serotina		7.7%	FACU	FAC species 15 x 3 = 45
4. Acer rubrum		7.7%	FAC	FACU species x 4 =292
5.		0.0%		UPL species $0 \times 5 = 0$
6		0.0%	·	Column Totals: 131 (A) 413 (B)
7		0.0%		
<i>I</i>		= Total Cove		Prevalence Index = B/A = <u>3.153</u>
Herb Stratum (Plot size: 5')	65			Hydrophytic Vegetation Indicators:
1.Pteridium aquilinum	20	17.2%	FACU	Rapid Test for Hydrophytic Vegetation
2.Rubus idaeus	10	8.6%	FAC-	Dominance Test is > 50%
2 Butter all sharely and		8.6%	FACU-	Prevalence Index is \leq 3.0 1
		28.4%	FACU	Morphological Adaptations ¹ (Provide supporting
E RULL II				data in Remarks or on a separate sheet)
5.Phalaris arundinacea			FACW+	Problematic Hydrophytic Vegetation ¹ (Explain)
6.Carex crinita	10	8.6%	OBL	¹ Indicators of hydric coil and watland hydrology must
7	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8	0	0.0%		Definitions of Vegetation Strata:
9	0	0.0%		Demittons of Vegetation Strata.
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0	0.0%		at breast height (DBH), regardless of height.
12	0	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)	116	= Total Cover		greater than 3.28 ft (1m) tall.
	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4.	0	0.0%		height.
	0	= Total Cover	-	
				Hydrophytic
				Vegetation Present? Yes O No •
Pomarks: (Include photo numbers here or on a consiste sh	oot)			1
Remarks: (Include photo numbers here or on a separate sh	eel.)			

(inches)		atrix		R	edox Features					
(inclies)	Color (mo	ist)	%	Color (moist)	%Ty	pe 1 Loc ²	Texture		Ren	narks
0-8	10YR	3/3	100%				Loam			
8-13	10YR	4/3	100%				Sandy Loam			
								_		
								_		
¹ Type: C=Cond	centration. D=D	epletion.	RM=Red	uced Matrix, CS=Cove	red or Coated Sar	nd Grains ² Loo	ation: PL=Pore Lin	ing. M=Ma	trix	
Hydric Soil I						Low		-		ia S aila - ³
				Polyvalue Belr	ow Surface (S8) (Indicators f			
Histic Epip				MLRA 149B)					RR K, L, MLF	
Black Histi				Thin Dark Sur	face (S9) (LRR R	, MLRA 149B)			(A16) (LRR	
	Sulfide (A4)			🗌 Loamy Mucky	Mineral (F1) LRR	K, L)			Peat (S3) (L	LRR K, L, R)
	Layers (A5)			Loamy Gleyed	I Matrix (F2)			face (S7) (
	Below Dark Surf	face (A11)	Depleted Mate	rix (F3)				rface (S8) (L	
	k Surface (A12)			Redox Dark S	urface (F6)				S9) (LRR K,	
_	ck Mineral (S1)			Depleted Dark	surface (F7)					LRR K, L, R)
	yed Matrix (S4)			Redox Depres	sions (F8)					(MLRA 149B)
Sandy Rec										, 145, 149B)
Stripped N								ent Material	(TF2) Surface (TF1)	2)
	ace (S7) (LRR R	, MLRA 1	49B)					xplain in Re		2)
3100		actation	and wotla	nd hydrology must be	procont unloss d	isturbod or prot			and K3)	
- indicators of		getation		na nyarology mast be	present, unless u	isturbed of prot				
Restrictive La	ayer (if observ									\bigcirc
Restrictive La	ayer (if observ						Hydric Soil Pr	ocont?	Vac O	
Restrictive La	ayer (if observ						Hydric Soil Pr	esent?	$Yes \bigcirc $	No 🖲
Restrictive La	ayer (if observ						Hydric Soil Pr	resent?	Yes O	No •
Restrictive La Type: Depth (inch	ayer (if observ						Hydric Soil Pr	esent?	Yes O	No 🔍
Restrictive La Type: Depth (inch	ayer (if observ						Hydric Soil Pr	esent?	Yes O	No 🔍
Restrictive La Type: Depth (inch	ayer (if observ						Hydric Soil Pr	esent?	Yes O	No 🔍
Restrictive La Type: Depth (inch	ayer (if observ						Hydric Soil Pr	resent?	Yes O	No
Restrictive La Type: Depth (inch	ayer (if observ						Hydric Soil Pr	resent?	Yes O	No
Restrictive La Type: Depth (inch	ayer (if observ						Hydric Soil Pr	resent?	Yes O	No
Restrictive La Type: Depth (inch	ayer (if observ						Hydric Soil Pr	resent?	Yes O	No
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Restrictive La Type: Depth (inch	ayer (if observ						Hydric Soil Pr	esent?	Yes O	No
Restrictive La Type: Depth (inch	ayer (if observ						Hydric Soil Pr	esent?	Yes O	No
Restrictive La Type: Depth (inch	ayer (if observ						Hydric Soil Pr	resent?	Yes O	No •
Restrictive La Type: Depth (inch	ayer (if observ						Hydric Soil Pr	resent?	Yes O	No •
Restrictive La Type: Depth (inch	ayer (if observ						Hydric Soil Pr	esent?	Yes O	No •
Restrictive La Type: Depth (inch	ayer (if observ						Hydric Soil Pr	esent?	Yes O	No •
Restrictive La Type: Depth (inch	ayer (if observ						Hydric Soil Pr	esent?	Yes O	No •
Restrictive La Type: Depth (inch	ayer (if observ						Hydric Soil Pr	resent?	Yes O	No •
Restrictive La Type: Depth (inch	ayer (if observ						Hydric Soil Pr	resent?	Yes O	No
Restrictive La Type: Depth (inch	ayer (if observ						Hydric Soil Pr	resent?	Yes O	No



AN32 Upland



AN32 Wetland

Project/Site: Antrim Wind Project	City/County:	Antrim		Sampling Date: 2	2-Aug-11
Applicant/Owner: Eolian Renewable Energy, LLC		State:	NH	Sampling Point:	AN33 Wetland
Investigator(s): AF JG	Section, T	ownship, Range: S.	т.	R.	
Landform (hillslope, terrace, etc.): Footslope	Local relief (c	oncave, convex, non	e): flat	Slope:	3.0 % / 1.7°
Subregion (LRR or MLRA): Lat.:		Long.:		Dat	tum:
Soil Map Unit Name:	-		NWI classif	ication: PSS	
	ntly disturbed? problematic? sampling p		olain any answ	ers in Remarks.)	
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No		e Sampled Area n a Wetland?	Yes $ullet$ No $igcap$)	
Remarks: (Explain alternative procedures here or in a separate rep Isolated PSS wetland within skidder trail.	ort.)				

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)
Primary Indicators (minimum of one required;	check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1)	✓ Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)		FAC-neutral Test (D5)
Field Observations:		
Surface Water Present? Yes O No 💿	Depth (inches):	
Water Table Present? Yes O No O	Depth (inches):	
Saturation Present? (includes capillary fringe) Yes • No	Wetland Hy Depth (inches):0	drology Present? Yes 🖲 No 🔾
Describe Recorded Data (stream gauge, monit	oring well, aerial photos, previous inspections), if available	ailable:
Remarks:		

VEGETATION - Use scientific names of plan	nts	Dominant Species?		Sampling Point: AN33 Wetland
Tree Stratum (Plot size:)	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
	0	0.0%	Status	Number of Dominant Species
	0	0.0%		That are OBL, FACW, or FAC: (A)
2		0.0%		Total Number of Dominant
3	0	0.0%		Species Across All Strata: 5 (B)
4	0	0.0%		Percent of dominant Species
5 6	-	0.0%		That Are OBL, FACW, or FAC: 80.0% (A/B)
		0.0%		Developer Index werkelses
7				Prevalence Index worksheet: Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15')	0	= Total Cover	-	OBL species 36 x 1 = 36
1. Cornus stolonifera	5	✓ 50.0%	FACW+	FACW speci es $70 \times 2 = 140$
2. Viburnum dentatum	5	50.0%	FAC	
3	0	0.0%		
4	0	0.0%		FACU species $33 \times 4 = 132$
5	0	0.0%		UPL species x 5 =
6	0	0.0%		Column Totals: <u>144</u> (A) <u>323</u> (B)
7.	0	0.0%		Prevalence Index = $B/A = 2.243$
Herb Stratum (Plot size: 5')	10	= Total Cove		Hydrophytic Vegetation Indicators:
·				Rapid Test for Hydrophytic Vegetation
1.Onoclea sensibilis	40	29.9%	FACW	✓ Dominance Test is > 50%
2.Solidago canadensis	33	24.6%	FACU	\checkmark Prevalence Index is $\leq 3.0^{1}$
3.Carex crinita	33	24.6%	OBL	Morphological Adaptations ¹ (Provide supporting
4. Rubus hispidus	25	18.7%	FACW	data in Remarks or on a separate sheet)
5.Osmunda regalis	3	2.2%	OBL	Problematic Hydrophytic Vegetation ¹ (Explain)
6	0	0.0%		
7	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8	0	0.0%		
9	0	0.0%		Definitions of Vegetation Strata:
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0	0.0%		at breast height (DBH), regardless of height.
12	0	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)	134	= Total Cover	-	greater than 3.28 ft (1m) tall
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0	0.0%		height.
	0	= Total Cover	-	
				Hydrophytic Vegetation
				Present? Yes I No
Remarks: (Include photo numbers here or on a separate she	et.)			

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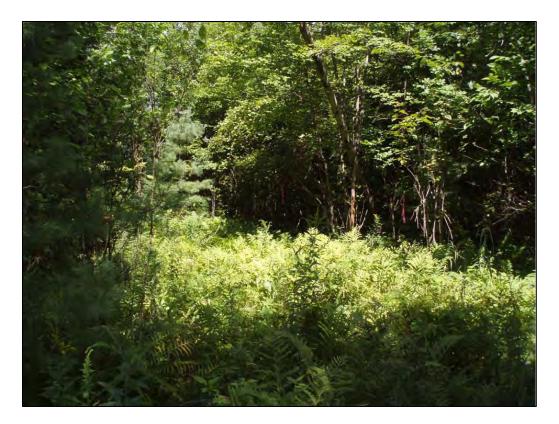
		Matrix		-		dox Featu					
(inches)	Color (%	Color	(moist)	%	Type 1	Loc ²	Texture	Remar	ks
0-14	10YR	3/2	100%						Loam		
14-20	2.5Y	5/2	90%	2.5Y	5/1	10%	D	Μ	Sand		
									·		
									-		
ype: C=Cor	centration. D	=Depletio	n. RM=Red	uced Matrix,	CS=Cover	ed or Coate	ed Sand Gra	ains ² Loca	ation: PL=Pore Lining.	M=Matrix	
	Indicators:										oils · ³
Histosol (Poly	walue Belo	w Surface ((S8) (I RR F		_	roblematic Hydric S	
_	pedon (A2)			MLF	RA 149B)			·,		10) (LRR K, L, MLRA	
Black His				🗌 Thir	n Dark Surf	face (S9) (I	LRR R, MLF	RA 149B)		Redox (A16) (LRR K, L	
	n Sulfide (A4)			🗌 Loa	my Mucky	Mineral (F1) LRR K, L)			Peat or Peat (S3) (LRR	K, L, R)
						Matrix (F2)			Dark Surface	(S7) (LRR K, L)	
	Layers (A5)				leted Matri					ow Surface (S8) (LRR	K, L)
-	Below Dark S		11)			urface (F6)			Thin Dark Su	face (S9) (LRR K, L)	
-	rk Surface (A			_		Surface (F	7)		Iron-Mangan	ese Masses (F12) (LRR	R K, L, R)
_	uck Mineral (S				lox Depres		,)		Piedmont Flo	odplain Soils (F19) (MI	LRA 149B)
Sandv Gl	eyed Matrix (S4)			iox Depres				Mesic Spodic	(TA6) (MLRA 144A, 14	45, 149B)
-									Red Parent M	aterial (TF2)	
Sandy Re											
Sandy Re	Matrix (S6)									Dark Surface (TF12)	
Sandy Re		r r, mlra	(149B)								
Sandy Re Stripped Dark Sur	Matrix (S6) face (S7) (LRI			nd hydrolog	y must be	present, un	less disturk	ed or probl	Very Shallow		
Sandy Re Stripped Dark Sur	Matrix (S6) face (S7) (LR f hydrophytic	vegetatio		nd hydrolog	y must be	present, un	less disturb	ed or probl	Very Shallow		
Sandy Re Stripped Dark Sur Indicators o	Matrix (S6) face (S7) (LRI	vegetatio		nd hydrolog	y must be	present, un	less disturt	ed or probl	Very Shallow		
Sandy Re Stripped Dark Sur Indicators o estrictive L	Matrix (S6) face (S7) (LRI f hydrophytic .ayer (if obs	vegetatio		nd hydrolog	y must be	present, un	less disturk	ed or probl	Very Shallow	n in Remarks)	
Sandy Re Stripped Dark Sur Indicators o	Matrix (S6) face (S7) (LRI f hydrophytic .ayer (if obs	vegetatio		nd hydrolog	y must be	present, un	less disturb	bed or probl	Very Shallow	n in Remarks)	lo ⁽⁾
Sandy Re Stripped Dark Sur Indicators o estrictive L	Matrix (S6) face (S7) (LRI f hydrophytic .ayer (if obs	vegetatio		nd hydrolog	y must be	present, un	less disturb	ed or probl	Very Shallow	n in Remarks)	lo ()
Sandy Re Stripped Dark Sur Indicators o estrictive L Type: Depth (inc	Matrix (S6) face (S7) (LRI f hydrophytic .ayer (if obs	vegetatio		nd hydrolog	y must be	present, un	less disturb	bed or probl	Very Shallow	n in Remarks)	lo ()
Sandy Re Stripped Dark Suri Indicators o estrictive L Type: Depth (inc	Matrix (S6) face (S7) (LRI f hydrophytic .ayer (if obs	vegetatio		nd hydrolog	y must be	present, un	less disturb	ed or probl	Very Shallow	n in Remarks)	lo ⁽⁾
Sandy Re Stripped Dark Suri Indicators o estrictive L Type: Depth (inc	Matrix (S6) face (S7) (LRI f hydrophytic .ayer (if obs	vegetatio		nd hydrolog	y must be j	present, un	less disturb	ed or probl	Very Shallow	n in Remarks)	lo ⁽⁾
Sandy Re Stripped Dark Suri Indicators o estrictive L Type: Depth (inc	Matrix (S6) face (S7) (LRI f hydrophytic .ayer (if obs	vegetatio		nd hydrolog	y must be j	present, un	less disturb	ed or probl	Very Shallow	n in Remarks)	lo ()
Sandy Re Stripped Dark Sur Indicators o estrictive L Type: Depth (inc	Matrix (S6) face (S7) (LRI f hydrophytic .ayer (if obs	vegetatio		nd hydrolog	y must be	present, un	less disturb	ed or probl	Very Shallow	n in Remarks)	lo ()
Sandy Re Stripped Dark Sur Indicators o estrictive L Type: Depth (inc	Matrix (S6) face (S7) (LRI f hydrophytic .ayer (if obs	vegetatio		nd hydrolog	y must be	present, un	less disturb	ed or probl	Very Shallow	n in Remarks)	lo ⁽⁾
Sandy Re Stripped Dark Suri Indicators o estrictive L Type: Depth (inc	Matrix (S6) face (S7) (LRI f hydrophytic .ayer (if obs	vegetatio		nd hydrolog	y must be	present, un	less disturt	ed or probl	Very Shallow	n in Remarks)	lo ⁽⁾
Sandy Re Stripped Dark Sur Indicators o estrictive L Type: Depth (inc	Matrix (S6) face (S7) (LRI f hydrophytic .ayer (if obs	vegetatio		nd hydrolog	y must be	present, un	less disturt	ed or probl	Very Shallow	n in Remarks)	lo ⁽)
Sandy Re Stripped Dark Sur Indicators o estrictive L Type: Depth (inc	Matrix (S6) face (S7) (LRI f hydrophytic .ayer (if obs	vegetatio		nd hydrolog	y must be	present, un	less disturk	ed or probl	Very Shallow	n in Remarks)	lo ⁽⁾
Sandy Re Stripped Dark Sur Indicators o estrictive L Type: Depth (inc	Matrix (S6) face (S7) (LRI f hydrophytic .ayer (if obs	vegetatio		nd hydrolog	y must be	present, un	less disturb	ed or probl	Very Shallow	n in Remarks)	lo ⁽⁾
Sandy Re Stripped Dark Sur Indicators o estrictive L Type: Depth (inc	Matrix (S6) face (S7) (LRI f hydrophytic .ayer (if obs	vegetatio		nd hydrolog	y must be j	present, un	less disturb	ed or probl	Very Shallow	n in Remarks)	lo ⁽⁾
Sandy Re Stripped Dark Suri Indicators o estrictive L Type: Depth (inc	Matrix (S6) face (S7) (LRI f hydrophytic .ayer (if obs	vegetatio		nd hydrolog	y must be j	present, un	less disturb	ed or probl	Very Shallow	n in Remarks)	lo ⁽⁾
Sandy Re Stripped Dark Suri Indicators o estrictive L Type: Depth (inc	Matrix (S6) face (S7) (LRI f hydrophytic .ayer (if obs	vegetatio		nd hydrolog	y must be	present, un	less disturb	ed or probl	Very Shallow	n in Remarks)	lo ⁽⁾
Sandy Re Stripped Dark Sur Indicators o estrictive L Type: Depth (inc	Matrix (S6) face (S7) (LRI f hydrophytic .ayer (if obs	vegetatio		nd hydrolog	y must be	present, un	less disturt	ed or probl	Very Shallow	n in Remarks)	lo ()
Sandy Re Stripped Dark Sur Indicators o estrictive L Type: Depth (inc	Matrix (S6) face (S7) (LRI f hydrophytic .ayer (if obs	vegetatio		nd hydrolog	y must be	present, un	less disturt	ed or probl	Very Shallow	n in Remarks)	lo ()
Sandy Re Stripped Dark Sur Indicators o estrictive L Type: Depth (inc	Matrix (S6) face (S7) (LRI f hydrophytic .ayer (if obs	vegetatio		nd hydrolog	y must be	present, un	less disturt	ed or probl	Very Shallow	n in Remarks)	lo ()
Sandy Re Stripped Dark Suri Indicators o estrictive L Type: Depth (inc	Matrix (S6) face (S7) (LRI f hydrophytic .ayer (if obs	vegetatio		nd hydrolog	y must be	present, un	less disturk	ed or probl	Very Shallow	n in Remarks)	lo ()
Sandy Re Stripped Dark Sur Indicators o estrictive L Type: Depth (inc	Matrix (S6) face (S7) (LRI f hydrophytic .ayer (if obs	vegetatio		nd hydrolog	y must be	present, un	less disturk	ed or probl	Very Shallow	n in Remarks)	lo ()

Subregion (LRR or MLRA): Lat.: Long.: Datum: Soil Map Unit Name: NWI classification: NWI classification: Are climatic/hydrologic conditions on the site typical for this time of year? Yes I No (If no, explain in Remarks.) Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No (Yes No (If needed, explain any answers in Remarks.) 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 (Is the Sampled Area within a Wetland? Hydrig Soil Present? Yes No (Is the Sampled Area within a Wetland? Yes No (Is the Sampled Area within a Wetland?	Project/Site: Antrim Wind Project		City/County: Antrim			Sampling Date: 2	2-Aug-11	
Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): flat Slope: 5.0 % / 2 Subregion (LRR or MLRA): Lat.: Long.: Datum: Soil Map Unit Name: NWI classification: Are climatic/hydrologic conditions on the site typical for this time of year? Yes Image: NWI classification: Are Vegetation , soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes No Is the Sampled Area within a Wetland? Yes No Is the Sampled Area within a Wetland?	Applicant/Owner: Eolian Renewable E	nergy, LLC		State: N	Н	Sampling Point:	AN33 Up	land
Subregion (LRR or MLRA): Lat.: Long.: Datum: Soil Map Unit Name: NWI classification: NWI classification: Are climatic/hydrologic conditions on the site typical for this time of year? Yes I No (If no, explain in Remarks.) Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No (Yes No (If needed, explain any answers in Remarks.) 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 (Is the Sampled Area within a Wetland? Hydrig Soil Present? Yes No (Is the Sampled Area within a Wetland? Yes No (Is the Sampled Area within a Wetland?	Investigator(s): AF JG		Section, Township, Rar	nge: S.	Т.	R.		
Soil Map Unit Name: NWI classification: Are climatic/hydrologic conditions on the site typical for this time of year? Yes	Landform (hillslope, terrace, etc.):	Hillside	Local relief (concave, conv	ex, none):	flat	Slope:	5.0 % /	2.9 °
Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.) Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Yes No Hydrode Area within a Wetland? Yes No No No No No No No No	Subregion (LRR or MLRA):	Lat.:		Long.:	-	Dat	um:	
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No	Soil Map Unit Name:				NWI classif	ication:		
Hydric Soil Present? Yes No No Is the Sampled Area within a Wetland? Yes No	Are Vegetation, Soil Are Vegetation, Soil	, or Hydrology Significant	tly disturbed? Are "No problematic? (If need	rmal Circui led, explaii	mstances" µ n any answe	ers in Remarks.)		etc.
Wetland Hydrology Present? Yes U No 🔍	Hydric Soil Present?				: 🔿 No 🖲)		

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)
Primary Indicators (minimum of one required;	check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2)	 Oxidized Rhizospheres along Living Roots (C3) 	Saturation Visible on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aguitard (D3)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)		FAC-neutral Test (D5)
Field Observations:		
Surface Water Present? Yes O No 💿	Depth (inches):	
Water Table Present? Yes O No •	Depth (inches):	drology Present? Yes 🔿 No 🖲
Saturation Present? (includes capillary fringe) Yes O No O	Wetland Hyd Depth (inches):	drology Present? Yes 🔾 No 🖲
Describe Recorded Data (stream gauge, monit	oring well, aerial photos, previous inspections), if ava	ailable:
Remarks:		

	113	Dominant Species?		Sampling Point: AN33 Upland
	Absolute	Rel.Strat.		Dominance Test worksheet:
Tree Stratum (Plot size: <u>30'</u>)	% Cover		Status	Number of Dominant Species
1. Fagus grandifolia	10	33.3%	FACU	That are OBL, FACW, or FAC: 0 (A)
2. Acer saccharum	10	33.3%	FACU-	Total Number of Dominant
3. Tsuga canadensis	10	33.3%	FACU	Species Across All Strata:6(B)
4		0.0%		
5	0	0.0%		Percent of dominant Species That Are OBL, FACW, or FAC:(A/B)
6	0	0.0%		
7	0	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	30	= Total Cove	r	Total % Cover of: Multiply by:
1. Fagus grandifolia	25	✓ 41.7%	FACU	$\begin{array}{c} \text{OBL specilles} & 0 & \text{x 1} = & 0 \\ \hline & & & & \\ \end{array}$
2. Populus tremula	15	25.0%	FACU	FACW species 10 x 2 = 20
3. Pinus strobus	5	8.3%	FACU	FAC species $3 \times 3 = 9$
4. Fraxinus pennsylvanica	10	16.7%	FACW	FACU speci es $\frac{80}{100}$ x 4 = $\frac{320}{100}$
5. Quercus rubra	5	8.3%	FACU-	UPL species $\frac{75}{2}$ x 5 = $\frac{375}{2}$
6.	0	0.0%		Column Totals: 168 (A) 724 (B)
7.	0	0.0%		Prevalence Index = $B/A = 4.310$
-		= Total Cove	r	
Herb Stratum (Plot size: 5')			•	Hydrophytic Vegetation Indicators:
1.Dennstaedtia punctilobula	75	96.2%	UPL	Rapid Test for Hydrophytic Vegetation
2. Malanthemum canadense	3	3.8%	FAC-	Dominance Test is > 50%
3.	0	0.0%		Prevalence Index is $\leq 3.0^{1}$
4.	0	0.0%		Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5.	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6.	0	0.0%		
7.	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must
8	0	0.0%		be present, unless disturbed or problematic.
9.	0	0.0%		Definitions of Vegetation Strata:
10.	0	0.0%		
11.	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
12.	0	0.0%		
Woody Vine Stratum (Plot size:)		= Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
	0			Lierh All berbesseur (zen wordt) plante regerdiese of
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
2	0	0.0%		
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4				height.
	0	= Total Cove	r	
				Hydrophytic
				Vegetation
				Present? Yes No •
Remarks: (Include photo numbers here or on a separate she	et.)			

(inches)		atrix _		needed to document the indicator or confirm the Redox Features	_	
0.0	Color (moi		%	Color (moist) % Type 1 Loc ²	Texture	Remarks
0-8			00%		Loam	
8-15	2.5Y	5/3 1	00%		Loamy Sand	
					p	
Type: C=Con	centration. D=De	epletion. I	RM=Red	uced Matrix, CS=Covered or Coated Sand Grains ² Loca	ation: PL=Pore Lining. M=N	latrix
Hydric Soil I						ematic Hydric Soils : ³
Histosol (Polyvalue Below Surface (S8) (LRR R,		(LRR K, L, MLRA 149B)
Histic Epi	pedon (A2)			MLRA 149B)		ox (A16) (LRR K, L, R)
Black Hist	tic (A3)			Thin Dark Surface (S9) (LRR R, MLRA 149B)		or Peat (S3) (LRR K, L, R)
	n Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)	Dark Surface (S7)	
_	Layers (A5)			Loamy Gleyed Matrix (F2)		Surface (S8) (LRR K, L)
	Below Dark Surf	ace (A11)		Redox Dark Surface (F6)	Thin Dark Surface	(S9) (LRR K, L)
	rk Surface (A12)			Depleted Dark Surface (F7)	Iron-Manganese	Masses (F12) (LRR K, L, R)
_	uck Mineral (S1)			Redox Depressions (F8)	Piedmont Floodpla	ain Soils (F19) (MLRA 149B)
Sandy Gle	eyed Matrix (S4)					5) (MLRA 144A, 145, 149B)
	Matrix (S6)				Red Parent Mater	
	face (S7) (LRR R,	MIRA 14	9B)		Very Shallow Dark	
					Other (Explain in	Remarks)
31	£		nd wetta	nd hydrology must be present, unless disturbed or probl	ematic.	
Restrictive L	ayer (if observ.					
Restrictive L Type: <u>B</u>	ayer (if observ oulders				Hydric Soil Present?	
Restrictive L	ayer (if observ oulders				Hydric Soil Present?	Yes 🔿 No 🖲
Restrictive L Type: Bo	ayer (if observ oulders				Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>B</u> Depth (inc	ayer (if observ oulders				Hydric Soil Present?	Yes 🔿 No 🖲
Restrictive L Type: <u>B</u> Depth (inc	ayer (if observ oulders				Hydric Soil Present?	Yes 🔿 No 🖲
Restrictive L Type: <u>B</u> Depth (inc	ayer (if observ oulders				Hydric Soil Present?	Yes 🗘 No 🖲
Restrictive L Type: <u>B</u> Depth (inc	ayer (if observ oulders				Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>B</u> Depth (inc	ayer (if observ oulders				Hydric Soil Present?	Yes O No 🖲
Restrictive L Type: <u>B</u> Depth (inc	ayer (if observ oulders				Hydric Soil Present?	Yes O No 🖲
Restrictive L Type: <u>B</u> Depth (inc	ayer (if observ oulders				Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>B</u> Depth (inc	ayer (if observ oulders				Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>B</u> Depth (inc	ayer (if observ oulders				Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>B</u> Depth (inc	ayer (if observ oulders				Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>B</u> Depth (inc	ayer (if observ oulders				Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>B</u> Depth (inc	ayer (if observ oulders				Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>B</u> Depth (inc	ayer (if observ oulders				Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>B</u> Depth (inc	ayer (if observ oulders				Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>B</u> Depth (inc	ayer (if observ oulders				Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>B</u> Depth (inc	ayer (if observ oulders				Hydric Soil Present?	Yes O No O
Restrictive L Type: <u>B</u> Depth (inc	ayer (if observ oulders				Hydric Soil Present?	Yes O No O



AN33 Wetland



AN33 Upland



AN33 Wetland



AN33 Wetland

						0		
Project/Site: Antrim Wind Project		City/County:	Antrim			Sampling Date: 2	6-Sep-11	
Applicant/Owner: Eolian Renewable E	Energy, LLC		St	tate: N	Н	Sampling Point:	AN35 we	tland
Investigator(s): AF JG		Section, To	wnship, Range	: S .	т.	R.		
Landform (hillslope, terrace, etc.):	Footslope	Local relief (co	oncave, convex,	none):	flat	Slope:	5.0 % /	2.9
Subregion (LRR or MLRA):	Lat.:		Lor	ng.:		Dat	tum:	
Soil Map Unit Name:				<u>.</u>	NWI classif	fication: PFO/PSS		
Are Vegetation , Soil Are Vegetation , Soil Summary of Findings - Af	, or Hydrology 🗌 naturally	tly disturbed? problematic? sampling p	•	al Circu , explai	mstances" n any answ	ers in Remarks.)		etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes ● No ○ Yes ● No ○ Yes ● No ○		Sampled Area a Wetland?	Yes	s 🖲 No 🤇)		
	ocedures here or in a separate reportion ROW and extends downslope	-						

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)
Primary Indicators (minimum of one required; of	heck all that apply)	Surface Soil Cracks (B6)
Surface Water (A1)	✓ Water-Stained Leaves (B9)	✓ Drainage Patterns (B10)
✓ High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2)	✓ Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)		✓ FAC-neutral Test (D5)
Field Observations:		
Surface Water Present? Yes O No 🖲	Depth (inches):	
Water Table Present? Yes No	Depth (inches): 2	
Saturation Present? (includes capillary fringe) Yes • No	Wetland Hyd Depth (inches): 0	drology Present? Yes $ullet$ No $igodoldsymbol{ imes}$
	ring well, aerial photos, previous inspections), if ava	ailable:
Remarks:		

	1113	Dominant Species?		Sampling Point: AN35 wetland
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
				Number of Dominant Species
1. Acer rubrum	15	27.3%	FAC	That are OBL, FACW, or FAC: <u>6</u> (A)
2. Betula alleghaniensis	15	27.3%	FAC	Total Number of Dominant
3. Fraxinus pennsylvanica	25	45.5%	FACW	Species Across All Strata: 6 (B)
4	0	0.0%		Demonst of deminent Creation
5	0	0.0%		Percent of dominant Species That Are OBL, FACW, or FAC:100.0% (A/B)
6	0	0.0%		
7	0	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	55	= Total Cove	r	Total % Cover of: Multiply by:
1. Fraxinus pennsylvanica	20	66.7%	FACW	$\begin{array}{c} \text{OBL species} 0 \text{x 1} = 0 \\ \hline 115 1 = 0 \\ \hline 200 1 \\ \hline \end{array}$
2. Ilex verticillata	10	33.3%	FACW+	FACW species $115 \times 2 = 230$
3.		0.0%		FAC species $30 \times 3 = 90$
4.	0	0.0%		FACU species x 4 =
5.	0	0.0%		UPL species x 5 =
6.	0	0.0%		Column Totals: 145 (A) 320 (B)
7.	0	0.0%		Prevalence Index = $B/A = 2.207$
	30	= Total Cove	r	
Herb Stratum (Plot size: 5')				Hydrophytic Vegetation Indicators:
1. Onoclea sensibilis	50	83.3%	FACW	✓ Dominance Test is > 50%
2.Osmunda cinnamomea	10		FACW	V Dominance rest is > 50% V Prevalence Index is $\leq 3.0^{1}$
3	0	0.0%		
4 <u>.</u>	0	0.0%		Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6.	0	0.0%		
7.	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must
8.	0	0.0%		be present, unless disturbed or problematic.
9.	0	0.0%		Definitions of Vegetation Strata:
10.	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11.	0	0.0%		at breast height (DBH), regardless of height.
12.	0	0.0%		Conting/abruh Woody plants less than 2 in DDU and
Woody Vine Stratum (Plot size:)	60	= Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall.
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		
4	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in height.
7		= Total Cove		noight.
			1	
				Hydrophytic
				Vegetation Present? Yes • No O
				present?
				1
Remarks: (Include photo numbers here or on a separate she	et.)			

Profile Desc Depth	ription: (Des	scribe to Matrix	the depth	needed to		t the indic dox Featu		nfirm the	absence of indicators.)	
(inches)	- Color (I		~ %	Color	(moist)	~ %		Loc ²	Texture	Remarks
0-8	10YR	3/2	100%						Loam	
8-14	2.5Y	4/2	95%	10YR	4/6	5%	С	М	Fine Sandy Loam	
14+										Bedrock
						_	_			
										-
1- 0.0										
		=Depletio	n. KIVI=Red	ucea Matrix,	US=Cover	ed or Coate	ed Sand Gra	ains ² Loca	ation: PL=Pore Lining. M=I	2
Hydric Soil					volu- D. /	f	(60) (100 5		Indicators for Prob	lematic Hydric Soils : 3
Histosol	(A1) ipedon (A2)				value Belo RA 149B)	w Surface	(S8) (LRR F	,		(LRR K, L, MLRA 149B)
Black His	•			🗌 Thir	n Dark Surf	ace (S9) (LRR R, MLF	A 149B)		ox (A16) (LRR K, L, R)
	n Sulfide (A4)			🗌 Loa	my Mucky	Mineral (F1) LRR K, L)			or Peat (S3) (LRR K, L, R)
	Layers (A5)			🗌 Loa	my Gleyed	Matrix (F2))		Dark Surface (S7	
	Below Dark S	Surface (A	11)	🗌 Dep	leted Matri	ix (F3)				Surface (S8) (LRR K, L)
_	rk Surface (A1			_		urface (F6)				e (S9) (LRR K, L) Masses (F12) (LRR K, L, R)
Sandy M	uck Mineral (S	51)		_		Surface (F	7)			ain Soils (F12) (LKK K, L, K)
Sandy G	eyed Matrix (S4)		Red	ox Depres	sions (F8)				6) (MLRA 144A, 145, 149B)
Sandy Re	edox (S5)								Red Parent Mater	
Stripped	Matrix (S6)								Very Shallow Dar	. ,
Dark Sur	face (S7) (LRI	r r, mlra	149B)						Other (Explain in	
³ Indicators of	of hydrophytic	vegetatio	n and wetla	nd hydrolog	must be	present, ur	nless disturb	ed or probl	lematic.	
Restrictive I	aver (if obs	erved):								
Type:										
Depth (in	ches):								Hydric Soil Present?	Yes $ullet$ No $igcap$
Remarks:										
Romants.										

Project/Site: Antrim Wind Project		City/County:	Antrim		Sampling Date: 2	26-Sep-11
Applicant/Owner: Eolian Renewable E	nergy, LLC	-	Sta	ate: NH	Sampling Point:	an35 upland
Investigator(s): AF JG		Section, To	wnship, Range:	S.	T. R.	
Landform (hillslope, terrace, etc.):	Footslope	Local relief (co	ncave, convex,	none): flat	Slope:	5.0%/2.9°
Subregion (LRR or MLRA):	Lat.:		Lon	g.:	Da	tum:
Soil Map Unit Name:		-		NWI cla	ssification:	
Are climatic/hydrologic conditions of Are Vegetation , Soil Are Vegetation , Soil Soil Summary of Findings - At	, or Hydrology Significant , or Hydrology naturally p	tly disturbed?	(If needed,	l Circumstance explain any ar	swers in Remarks.)	
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes No Yes No Yes No		Sampled Area a Wetland?	Yes $^{\bigcirc}$ No) •	
Remarks: (Explain alternative pro	cedures here or in a separate repo	ort.)				

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)
Primary Indicators (minimum of one required;	check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2)	 Oxidized Rhizospheres along Living Roots (C3) 	Saturation Visible on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)		FAC-neutral Test (D5)
Field Observations:		
Surface Water Present? Yes O No 🖲	Depth (inches):	
Water Table Present? Yes O No 🖲	Depth (inches):	Irology Present? Yes 🔿 No 🖲
Saturation Present? (includes capillary fringe) Yes O No O	Wetland Hyd	Irology Present? Yes 🔾 No 🖲
	pring well, aerial photos, previous inspections), if ava	ilable:
Remarks:		

	1113	Dominant Species?		Sampling Point: an35 upland
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	
	33	46.5%	FACU-	Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)
	20	 ✓ 40.3 % ✓ 28.2% 	FACU	
O Disus stastus	8	11.3%	FACU	Total Number of Dominant
1		14.1%	FACU-	Species Across All Strata: 7 (B)
4. Acer saccharum			FACU-	Percent of dominant Species
5	0			That Are OBL, FACW, or FAC:
6		0.0%		
7		0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	71	= Total Cove	r	Total % Cover of: Multiply by:
1. Fagus grandifolia	15	60.0%	FACU	OBL species $0 \times 1 = 0$
2. Fraxinus pennsylvanica		40.0%	FACW	FACW species $10 \times 2 = 20$
0		0.0%		FAC species 15 x 3 = 45
3 4		0.0%		FACU speci es 111 x 4 = 444
т 5	0	0.0%		UPL species $10 \times 5 = 50$
56.	0	0.0%		Column Totals: 146 (A) 559 (B)
	0			
7		0.0%		Prevalence Index = B/A = <u>3.829</u>
Herb Stratum (Plot size: 5')	25	= Total Cove	r	Hydrophytic Vegetation Indicators:
1.Trientalis borealis	15	30.0%	FAC	Rapid Test for Hydrophytic Vegetation
2		 ✓ 50.0% 	FACU	Dominance Test is > 50%
3. Dennstaedtla punctilobula	10	 ✓ 30.0 % ✓ 20.0% 	UPL	□ Prevalence Index is \leq 3.0 ¹
4.	0	0.0%		Morphological Adaptations ¹ (Provide supporting
F				data in Remarks or on a separate sheet)
5 <u>.</u> 6.		0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must
7	0	0.0%		be present, unless disturbed or problematic.
8	0	0.0%		Definitions of Vegetation Strata:
9	0	0.0%		Demittons of Vegetation Strata.
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0	0.0%		at breast height (DBH), regardless of height.
12	0	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)	50	= Total Cove	r	greater than 3.28 ft (1m) tall.
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0	0.0%		height.
	0	= Total Cove	r	
	0	- 10101 0010	•	
				Hydrophytic
				Vegetation V O V O
				Present? Yes V NO
				<u> </u>
Remarks: (Include photo numbers here or on a separate she	et.)			

Depth	-	latrix	the depth	needed to document the indicator or confire Redox Features		absence of indicators.)	
(inches)	Color (mo	oist)	%	Color (moist) % Type 1 L	Loc2	Texture	Remarks
0-6	10YR	3/2	100%			Loam	
6-11	10YR	4/6	100%			Fine Sandy Loam	
11-16	10YR	4/4	100%			Fine Sandy Loam	
						P	
				·			
1						tion DI Dens Lining M A	
		rehietioi	ιι. κivi=Ked	uced Matrix, CS=Covered or Coated Sand Grains	~LOCal		2
<u> </u>	Indicators:			Dolwaluo Polow Surface (SO) (LDD D			ematic Hydric Soils : ³
Histosol	(AT) vipedon (A2)			Polyvalue Below Surface (S8) (LRR R, MLRA 149B)			(LRR K, L, MLRA 149B)
Black His	•			Thin Dark Surface (S9) (LRR R, MLRA 14	19B)		ox (A16) (LRR K, L, R)
	n Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)			or Peat (S3) (LRR K, L, R)
_ · ·	d Layers (A5)			Loamy Gleyed Matrix (F2)		Dark Surface (S7)	
	d Below Dark Sur	face (A	11)	Depleted Matrix (F3)			Surface (S8) (LRR K, L)
	ark Surface (A12)		,	Redox Dark Surface (F6)		Thin Dark Surface	
	luck Mineral (S1)			Depleted Dark Surface (F7)			Masses (F12) (LRR K, L, R) ain Soils (F19) (MLRA 149B)
	leyed Matrix (S4)			Redox Depressions (F8)			5) (MLRA 144A, 145, 149B)
	edox (S5)					Red Parent Materi	
Stripped	Matrix (S6)					Very Shallow Dark	
Dark Sur	rface (S7) (LRR F	r, mlra	149B)			Other (Explain in	
³ Indicators of	of hydrophytic ve	egetatio	n and wetla	nd hydrology must be present, unless disturbed o	or proble		
	Layer (if observ						
Type:		veu).					
Depth (in	ches).					Hydric Soil Present?	Yes 🔿 No 🖲
	cnes)					-	
Remarks:							



AN35 Wetland

Project/Site: Antrim Wind Project		City/County:	Antrim		Sampling Date: 2	7-Sep-11
Applicant/Owner: Eolian Renewable E	nergy, LLC		Sta	ate: NH	Sampling Point:	an36 wetland
Investigator(s): AF JG		Section, T	ownship, Range:	S. 1	г. R .	
Landform (hillslope, terrace, etc.):	Saddle	Local relief (c	oncave, convex, i	none): flat	Slope:	0.0 % / 0.0°
Subregion (LRR or MLRA):	Lat.:		Lon	g.:	Dat	tum:
Soil Map Unit Name:				NWI clas	sification: PFO	
Are climatic/hydrologic conditions of Are Vegetation , Soil Are Vegetation , Soil Summary of Findings - At	, or Hydrology Significant	tly disturbed? problematic?	(If needed,	. ,	s" present? Yes	
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Ves No Yes No Yes No Yes No		e Sampled Area n a Wetland?	Yes 🖲 No	0	
Remarks: (Explain alternative pro Saddle PFO between ridgline near	• •	-				

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)
Primary Indicators (minimum of one required; c	heck all that apply)	Surface Soil Cracks (B6)
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)
✓ High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2)	 And the second se	Saturation Visible on Aerial Imagery (C9)
Drift deposits (B3)	Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)
☐ Iron Deposits (B5)		Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	Thin Muck Surface (C7)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	Other (Explain in Remarks)	✓ FAC-neutral Test (D5)
Field Observations:		
Surface Water Present? Yes O No O	Depth (inches):	
Water Table Present? Yes No	Depth (inches): <u>1</u>	
Saturation Present? (includes capillary fringe) Yes • No	Depth (inches): 0 Wetland Hyd	drology Present? Yes $ullet$ No $igodoldsymbol{ imes}$
Describe Recorded Data (stream gauge, monitor	ring well, aerial photos, previous inspections), if ava	ilable:
Remarks:		

	113	Dominant Species?		Sampling Point: an36 wetland
Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
1. Acer rubrum	20	✓ 100.0%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)
2	0	0.0%		
3.	0	0.0%		Total Number of Dominant
4	0	0.0%		Species Across All Strata: (B)
5.		0.0%		Percent of dominant Species
6		0.0%		That Are OBL, FACW, or FAC:(A/B)
7	0	0.0%		Prevalence Index worksheet:
		= Total Cove	r	Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15')				OBL speci es 3 x 1 = 3
1. Acer rubrum	20	34.5%	FAC	FACW species 23 x 2 = 46
2. Betula alleghaniensis	20	⊻ 34.5%	FAC	FAC species 85 x 3 = 255
3. Fraxinus pennsylvanica	8	13.8%	FACW	FACU species $0 \times 4 = 0$
4. Viburnum lantanoides	10	17.2%	FAC	
5	0	0.0%		UPL species $\underbrace{0}_{111}$ x 5 = $\underbrace{0}_{201}$
6	0	0.0%		Column Totals: <u>111</u> (A) <u>304</u> (B)
7	0	0.0%		Prevalence Index = B/A = 2.739
Herb Stratum (Plot size: 5')	58	= Total Cove	r	Hydrophytic Vegetation Indicators:
1.Betula alleghaniensis	15	✔ 45.5%	FAC	Rapid Test for Hydrophytic Vegetation
	3	9.1%	OBL	✓ Dominance Test is > 50%
2.Osmunda regalis 3.Osmunda cinnamomea	15	45.5%	FACW	V Prevalence Index is \leq 3.0 ¹
4.	0	0.0%		Morphological Adaptations ¹ (Provide supporting
5.	0	0.0%		data in Remarks or on a separate sheet)
6.	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
7.	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must
8.	0	0.0%		be present, unless disturbed or problematic.
9.				Definitions of Vegetation Strata:
3 <u>.</u> 10.	0	0.0%		
11.	0			Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
12.	0	0.0%		at bleast height (DBH), regardless of height.
12	 33	0.0% = Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)				greater than 3.28 ft (1m) tall
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0	0.0%		height.
	0	= Total Cove	r	
				Hydrophytic
				Vegetation Present? Yes • No ·
				Present? Yes VO V
Demontra (la chuda ata da	-+ >			1
Remarks: (Include photo numbers here or on a separate sheet)	et.)			

22+ 2.5Y 5/1 100%	Texture Remarks Peat
22+ 2.5Y 5/1 100% C	Gravelly Sand
Image: Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains 2Location Image: Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains 2Location Image: Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains 2Location Image: Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains 2Location Image: Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains 2Location Image: Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains 2Location Image: Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains 2Location Image: Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains 2Location Image: Type: T	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) Dark Surface (S7) (LRR K, L) 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 144B) Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
Hydric Soil Indicators: Polyvalue Below Surface (S8) (LRR R, MLRA 149B) Histosol (A1) Polyvalue Below Surface (S8) (LRR R, MLRA 149B) Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) LRR K, L) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LRR R, MLRA 149B)	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) Dark Surface (S7) (LRR K, L) 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) Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
Hydric Soil Indicators: Polyvalue Below Surface (S8) (LRR R, MLRA 149B) Histosol (A1) Polyvalue Below Surface (S8) (LRR R, MLRA 149B) Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) LRR K, L) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LRR R, MLRA 149B)	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) Dark Surface (S7) (LRR K, L) 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) Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
Hydric Soil Indicators: Polyvalue Below Surface (S8) (LRR R, MLRA 149B) Histosol (A1) Polyvalue Below Surface (S8) (LRR R, MLRA 149B) Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) LRR K, L) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LRR R, MLRA 149B)	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) Dark Surface (S7) (LRR K, L) 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) Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
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Insuring (R4) Loamy Gleyed Matrix (F2) Stratified Layers (A5) Depleted Matrix (F3) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LRR R, MLRA 149B) Depleted Dark Surface (S7)	 Dark Surface (S7) (LRR K, L) 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) Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
Ordelined Edycle (G) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LRR R, MLRA 149B) Depleted Dark Surface (S7)	 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) Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
Depicted blow bark Surface (HT) Redox Dark Surface (F6) Thick Dark Surface (A12) Depieted Dark Surface (F7) Sandy Muck Mineral (S1) Redox Depressions (F8) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LRR R, MLRA 149B) Depieted Dark Surface (S7)	Thin Dark Surface (S9) (LRR K, L) Iron-Manganese Masses (F12) (LRR K, L, R) Piedmont Floodplain Soils (F19) (MLRA 149B) Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
Intervolution of the control of the	 Iron-Manganese Masses (F12) (LRR K, L, R) Piedmont Floodplain Soils (F19) (MLRA 149B) Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
Sandy Gleyed Matrix (S4) Redox Depressions (F8) Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LRR R, MLRA 149B)	Piedmont Floodplain Soils (F19) (MLRA 149B) Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
Sandy Gleyed Mark (S4) Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LRR R, MLRA 149B)	Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
Stripped Matrix (S6) Dark Surface (S7) (LRR R, MLRA 149B)	
Dark Surface (S7) (LRR R, MLRA 149B)	
	Very Shallow Dark Surface (TF12)
3	Other (Explain in Remarks)
³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problema	natic.
Restrictive Layer (if observed):	
Type:	
	Hydric Soil Present? Yes $ullet$ No $igodoldsymbol{O}$
Remarks:	

Project/Site: Antrim Wind Project		City/County: Antrim			Sampling Date: 27-Sep-11			
Applicant/Owner: Eolian Renewable E	nergy, LLC		State:	NH	Sampling Point:	an36 upland		
Investigator(s): AF JG		Section, Townshi	ip, Range: S.	т.	R.			
Landform (hillslope, terrace, etc.): Saddle		Local relief (concave, convex, none): convex			Slope:	15.0 % / 8.5°		
Subregion (LRR or MLRA):	Lat.:	Long.:			Datum:			
Soil Map Unit Name:				NWI classif	ication:			
Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.) Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No Are Vegetation , soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.								
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes No Yes No Yes No	Is the Samp within a We		Yes 🔿 No 🖲)			
Remarks: (Explain alternative pro	cedures here or in a separate repo	ort.)						

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)				
Primary Indicators (minimum of one required;	Surface Soil Cracks (B6)					
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)				
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)				
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)				
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)				
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)				
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)				
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)				
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)				
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)				
Sparsely Vegetated Concave Surface (B8)		FAC-neutral Test (D5)				
Field Observations:						
Surface Water Present? Yes O No 🖲	Depth (inches):					
Water Table Present? Yes O No 💿	Depth (inches):					
Saturation Present? Yes O No •	Wetland Hyd	Wetland Hydrology Present? Yes \bigcirc No $oldsymbol{igodol}$				
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:						
Remarks:						

DominantSpecies?			Sampling Point: an36 upland		
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:	
				Number of Dominant Species	
1. Acer saccharum	15	33.3%	FACU-	That are OBL, FACW, or FAC: 2 (A)	
2. Fagus grandifolia	15	33.3%	FACU	Total Number of Dominant	
3. Betula alleghaniensis	15	33.3%	FAC	Species Across All Strata: 8 (B)	
4	0	0.0%		Demonst of deminent Creation	
5	0	0.0%		Percent of dominant Species That Are OBL, FACW, or FAC:25.0%(A/B)	
6	0	0.0%			
7	0	0.0%		Prevalence Index worksheet:	
Sapling/Shrub Stratum (Plot size: 15')	45	= Total Cove	r	Total % Cover of: Multiply by:	
1. Fagus grandifolia	8	30.8%	FACU	OBL species $0 \times 1 = 0$	
2. Picea rubens	18	69.2%	FACU	FACW species $0 \times 2 = 0$	
3.	0	0.0%		FAC species $20 \times 3 = 60$	
4	0	0.0%		FACU species $\frac{66}{x 4} =264$	
	0	0.0%		UPL species x 5 =0	
5	0	0.0%		Column Totals: 86 (A) 324 (B)	
6	0	0.0%			
7	-			Prevalence Index = B/A = <u>3.767</u>	
Herb Stratum (Plot size: 5')	26	= Total Cove	ſ	Hydrophytic Vegetation Indicators:	
1.Aralia nudicaulis	5	33.3%	FACU	Rapid Test for Hydrophytic Vegetation	
2.Fagus grandifolia	5	33.3%	FACU	Dominance Test is > 50%	
3. Trientalis borealis	5	33.3%	FAC	□ Prevalence Index is \leq 3.0 ¹	
4.	0	0.0%		Morphological Adaptations ¹ (Provide supporting	
5.	0	0.0%		data in Remarks or on a separate sheet)	
6.	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)	
7.				¹ Indicators of hydric soil and wetland hydrology must	
8.	0			be present, unless disturbed or problematic.	
9.	0			Definitions of Vegetation Strata:	
9. 10.	0	0.0%			
11.	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
12.	0	0.0%		at breast height (DBH), regardless of height.	
12	0	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and	
Woody Vine Stratum (Plot size:)	15	= Total Cove	r	greater than 3.28 ft (1m) tall	
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of	
2	0	0.0%		size, and woody plants less than 3.28 ft tall.	
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in	
4	0	0.0%		height.	
	0	= Total Cove	r		
				Hydrophytic	
				Vegetation Present? Yes O No •	
				i result.	
2					
Remarks: (Include photo numbers here or on a separate she	et.)				

Profile Desc	ription: (Desc	ribe to	the depth	needed to document the indicator or confirm the	absence of indicators.)	
Depth		latrix		Redox Features		
(inches)	Color (mo		%	Color (moist) % Type 1 Loc ²	Texture	Remarks
0-6	10YR	3/2	100%		Loam	
6-9	10YR	4/4	100%		Sandy Loam	
9-13	10YR	4/6	100%		Sandy Loam	
					·	
		Donlatio		uced Matrix, CS=Covered or Coated Sand Grains ² Loca	ation: PL-Pore Lining M-M	atriv
		Pehierini				
Hydric Soil				Polyvalue Below Surface (S8) (LRR R,		ematic Hydric Soils : ³
	ipedon (A2)			MLRA 149B)		(LRR K, L, MLRA 149B)
Black His				Thin Dark Surface (S9) (LRR R, MLRA 149B)		x (A16) (LRR K, L, R)
	n Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)		or Peat (S3) (LRR K, L, R)
	Layers (A5)			Loamy Gleyed Matrix (F2)	Dark Surface (S7)	
	Below Dark Sur	rface (A'	11)	Depleted Matrix (F3)	Thin Dark Surface	urface (S8) (LRR K, L)
Thick Da	rk Surface (A12))		Redox Dark Surface (F6)		(39) (LRR K, L) lasses (F12) (LRR K, L, R)
Sandy M	uck Mineral (S1))		Depleted Dark Surface (F7)		in Soils (F19) (MLRA 149B)
Sandy Gl	eyed Matrix (S4)		Redox Depressions (F8)) (MLRA 144A, 145, 149B)
	edox (S5)				Red Parent Materia	
	Matrix (S6)				Very Shallow Dark	
Dark Sur	face (S7) (LRR F	r, mlra	149B)		Other (Explain in R	Remarks)
³ Indicators of	of hydrophytic ve	egetatio	n and wetla	and hydrology must be present, unless disturbed or probl	ematic.	
	_ayer (if obser					
Type:		,				
Depth (inc	ches):				Hydric Soil Present?	Yes 🔿 No 🖲
Remarks:	,					
Remarks.						



AN36 Wetand

Project/Site: Antrim Wind Project	City/County:	Antrim				Sampling Date: 2	7-Sep-11		
Applicant/Owner: Eolian Renewable Energy, LLC			State:	NH		Sampling Point:	an37 wet	tland	
Investigator(s): AF JG		Section, Te	ownship, Rar	nge: S.		Т.	R.		
Landform (hillslope, terrace, etc.): Terrace		Local relief (c	oncave, conv	ex, non	e): fla	at –	Slope:	0.0%/	0.0 °
Subregion (LRR or MLRA):	Lat.:			Long.:			Dat	:um:	
Soil Map Unit Name:	_	-			NW	I classif	ication: PFO		
	aturally p	tly disturbed? problematic? sampling p	(If need	rmal Cir led, exp	cumst	ances" µ answo	Remarks.) present? Yes (ers in Remarks.) , important fe		etc.
Hydrophytic Vegetation Present?YesNoHydric Soil Present?YesNoWetland Hydrology Present?YesNo			e Sampled Aro n a Wetland?		Yes 🖲) No C)		
Remarks: (Explain alternative procedures here or in a separ	rate repo	ort.)							

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)
Primary Indicators (minimum of one required;	check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1)	✓ Water-Stained Leaves (B9)	✓ Drainage Patterns (B10)
✓ High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)
Water Marks (B1)		Crayfish Burrows (C8)
Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)	
	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)		✓ FAC-neutral Test (D5)
Field Observations:		
Surface Water Present? Yes No	Depth (inches): 1	
Water Table Present? Yes No	Depth (inches): 0	droloav Present? Yes $ullet$ No \bigcirc
Saturation Present? (includes capillary fringe) Yes • No	Wetland Hy Depth (inches):0	drology Present? Yes $ullet$ No $igloodow$
Describe Recorded Data (stream gauge, monitor	pring well, aerial photos, previous inspections), if available	ailable:
Remarks:		

	110	Dominant Species?		Sampling Point: an37 wetland
Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
1. Acer rubrum	20	✓ 100.0%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)
2	0	0.0%		
3.	0	0.0%		Total Number of Dominant Species Across All Strata: 5 (B)
4	0	0.0%		Species Across All Strata: (B)
5		0.0%		Percent of dominant Species
6		0.0%		That Are OBL, FACW, or FAC:(A/B)
7	0	0.0%		Prevalence Index worksheet:
1		= Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15')				OBL species 3 x 1 = 3
1. Acer rubrum	10	28.6%	FAC	
2. Betula alleghaniensis	20	57.1%	FAC	
3. Vaccinium corymbosum	5	14.3%	FACW-	
4.	0	0.0%		FACU species $0 \times 4 = 0$
5	0	0.0%		UPL species $0 \times 5 = 0$
6	0	0.0%		Column Totals: <u>63</u> (A) <u>173</u> (B)
7.	0	0.0%		Prevalence Index = $B/A = 2.746$
	35	= Total Cover	-	
Herb Stratum (Plot size: 5')				Hydrophytic Vegetation Indicators:
1.Osmunda cinnamomea	5	62.5%	FACW	Rapid Test for Hydrophytic Vegetation
2.Carex lurida	3	37.5%	OBL	Dominance Test is > 50%
3.	0	0.0%		✓ Prevalence Index is $\leq 3.0^{1}$
4.	0	0.0%		Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5.	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6.	0	0.0%		
7.	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must
8.	0	0.0%		be present, unless disturbed or problematic.
9.	0	0.0%		Definitions of Vegetation Strata:
10.	0	0.0%		
11.	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
12.	0	0.0%		
Woody Vine Stratum (Plot size:)		= Total Cover		Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
<u> </u>	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
0	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in height.
4		-		
	0	= Total Cover	-	
				I hadaa ahadia
				Hydrophytic Vegetation
				Present? Yes No
Remarks: (Include photo numbers here or on a separate she	et.)			

(inches)	-	latrix		Redox Features		
	Color (mo		%	Color (moist) % Type 1 Loc ²		emarks
0-10	10YR	3/2	100%		Muck	
10-15	2.5Y	4/2	100%		Fine Sandy Loam	
			-			
¹ Type: C=Cor	ncentration. D=D	Depletior	. RM=Red	uced Matrix, CS=Covered or Coated Sand Grains ² Loca	ation: PL=Pore Lining. M=Matrix	
Hydric Soil	Indicators:				Indicators for Problematic Hyd	dric Soils : ³
Histosol ((A1)			Polyvalue Below Surface (S8) (LRR R,	2 cm Muck (A10) (LRR K, L, N	
Histic Epi	ipedon (A2)			MLRA 149B)	Coast Prairie Redox (A16) (LR	
Black His				Thin Dark Surface (S9) (LRR R, MLRA 149B)	5 cm Mucky Peat or Peat (S3)	
	n Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)	Dark Surface (S7) (LRR K, L)	
	Layers (A5)			Loamy Gleyed Matrix (F2)	Polyvalue Below Surface (S8)	(LRR K, L)
_	Below Dark Sur		1)	Depleted Matrix (F3)	Thin Dark Surface (S9) (LRR	
_	rk Surface (A12)			Redox Dark Surface (F6)	Iron-Manganese Masses (F12)	
	uck Mineral (S1)			Depleted Dark Surface (F7) Redox Depressions (F8)	Piedmont Floodplain Soils (F1	9) (MLRA 149B)
_	eyed Matrix (S4))			Mesic Spodic (TA6) (MLRA 14	4A, 145, 149B)
Sandy Re					Red Parent Material (TF2)	
	Matrix (S6)				Very Shallow Dark Surface (T	F12)
Dark Surf	face (S7) (LRR R	r, Mlra	149B)		Other (Explain in Remarks)	
		enetation	and wetla	nd hydrology must be present, unless disturbed or probl	ematic.	
	of hydrophytic ve	gotation				
³ Indicators o						
³ Indicators o Restrictive L	f hydrophytic ve .ayer (if observ					
³ Indicators o Restrictive L Type:	ayer (if obser				Hydric Soil Present? Yes •) No ()
³ Indicators o Restrictive L Type: Depth (ind	ayer (if obser				Hydric Soil Present? Yes 🖲) _{No} ()
³ Indicators o Restrictive L Type:	ayer (if obser				Hydric Soil Present? Yes •) No ()
³ Indicators o Restrictive L Type: Depth (ind	ayer (if obser				Hydric Soil Present? Yes 🖲) No ()
³ Indicators o Restrictive L Type: Depth (ind	ayer (if obser				Hydric Soil Present? Υes Θ) No ()
³ Indicators o Restrictive L Type: Depth (ind	ayer (if obser				Hydric Soil Present? Yes ④) No ()
³ Indicators o Restrictive L Type: Depth (inc	ayer (if obser				Hydric Soil Present? Yes ●) No ()
³ Indicators o Restrictive L Type: Depth (inc	ayer (if obser				Hydric Soil Present? Yes ●) No ()
³ Indicators o Restrictive L Type: Depth (ind	ayer (if obser				Hydric Soil Present? Yes ●) No ()
³ Indicators o Restrictive L Type: Depth (ind	ayer (if obser				Hydric Soil Present? Yes Θ) No ()
³ Indicators o Restrictive L Type: Depth (ind	ayer (if obser				Hydric Soil Present? Yes Θ	> No ○
³ Indicators o Restrictive L Type: Depth (ind	ayer (if obser				Hydric Soil Present? Yes ●	> No ○
³ Indicators o Restrictive L Type: Depth (inc	ayer (if obser				Hydric Soil Present? Yes ●	> No ○
³ Indicators o Restrictive L Type: Depth (ind	ayer (if obser				Hydric Soil Present? Yes •) No ()
³ Indicators o Restrictive L Type: Depth (ind	ayer (if obser				Hydric Soil Present? Yes •) No ()
³ Indicators o Restrictive L Type: Depth (ind	ayer (if obser				Hydric Soil Present? Yes •) No ()
³ Indicators o Restrictive L Type: Depth (inc	ayer (if obser				Hydric Soil Present? Yes	> No ○
³ Indicators o Restrictive L Type: Depth (inc	ayer (if obser				Hydric Soil Present? Yes	> No ○
³ Indicators o Restrictive L Type: Depth (inc	ayer (if obser				Hydric Soil Present? Yes •) No ○
³ Indicators o Restrictive L Type: Depth (inc	ayer (if obser				Hydric Soil Present? Yes •	D No ○
³ Indicators o Restrictive L Type: Depth (inc	ayer (if obser				Hydric Soil Present? Yes •) No ()

Project/Site: Antrim Wind Project		City/County: Antrim		Sampling Date: 2	7-Sep-11
Applicant/Owner: Eolian Renewable E	inergy, LLC	State	:	Sampling Point:	an37 upland
Investigator(s): AF JG		Section, Township, Range: S.	т.	R.	
Landform (hillslope, terrace, etc.):	Hillside	Local relief (concave, convex, nor	ne): undulating	g Slope:	25.0 % / 14.0 °
Subregion (LRR or MLRA):	Lat.:	Long.:	-	Datum:	
Soil Map Unit Name:			NWI classif	ication:	
Are climatic/hydrologic conditions of Are Vegetation , Soil Are Vegetation , Soil Summary of Findings - At	, or Hydrology Significant	ly disturbed? Are "Normal Conception of the second se		ers in Remarks.)	
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes ○ No ● Yes ○ No ● Yes ○ No ●	Is the Sampled Area within a Wetland?	Yes 🔿 No 🖲)	
Remarks: (Explain alternative pro	cedures here or in a separate repo	rt.)			

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	11.5	Dominant Species?		Sampling Point: an37 upland
Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
1. Quercus rubra	50	60.2%	FACU-	Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)
2. Tsuga canadensis	33	✓ 39.8%	FACU	
3.		0.0%		Total Number of Dominant Species Across All Strata: 7 (B)
4		0.0%		Species Across All Strata: 7 (B)
5.	0	0.0%		Percent of dominant Species
6.		0.0%		That Are OBL, FACW, or FAC:(A/B)
7		0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')		= Total Cove	r	Total % Cover of: Multiply by:
	10	25.0%	FAC	OBL species $0 \times 1 = 0$
0	45	 ✓ 25.0 % ✓ 37.5 % 	FACU	FACW species $0 \times 2 = 0$
o		 ✓ 37.5% ✓ 37.5% 	FAC	FAC species 25 x 3 = 75
4		0.0%	FAC	FACU species x 4 =452
E		0.0%		UPL species x 5 =
6				Column Totals: 138 (A) 527 (B)
7		0.0%		
7	 40	0.0%	 r	Prevalence Index = B/A = <u>3.819</u>
Herb Stratum (Plot size: 5')			-	Hydrophytic Vegetation Indicators:
1.Aralia nudicaulis	5	33.3%	FACU	Rapid Test for Hydrophytic Vegetation
2. Quercus rubra	10	66.7%	FACU-	Dominance Test is > 50%
3.	0	0.0%		$\square Prevalence Index is \leq 3.0^{1}$
4.	0	0.0%		Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5.	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6.	0	0.0%		
7.	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must
8.	0	0.0%		be present, unless disturbed or problematic.
9.	0	0.0%		Definitions of Vegetation Strata:
10.	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11.	0	0.0%		at breast height (DBH), regardless of height.
12.	0	0.0%		
Woody Vine Stratum (Plot size:)	15	= Total Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
,,,	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		Weady vine All weady vince greater than 2.28 ft in
4	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in height.
	0	= Total Cove	r	5
				Hydrophytic Vegetation
				Present? Yes O No O
Remarks: (Include photo numbers here or on a separate she	et.)			

Profile Desc	ription: (Desc	ribe to	the depth	needed to document the indicator or confirm the	e absence of indicators.)	
Depth (inches)		latrix		Redox Features		
	Color (m		%	Color (moist) % Type 1 Loc ²		Remarks
0-8	10YR	3/2	100%		Loam	
8-16	10YR	4/4	100%		Sandy Loam	
16+						Bedrock
					_	
	·			······································		
		Depletio	n. RM=Red	uced Matrix, CS=Covered or Coated Sand Grains ² Lo	cation: PL=Pore Lining. M=I	Matrix
Hydric Soil					Indicators for Prob	lematic Hydric Soils : ³
Histosol				Polyvalue Below Surface (S8) (LRR R, MLRA 149B)		(LRR K, L, MLRA 149B)
	ipedon (A2)			Thin Dark Surface (S9) (LRR R, MLRA 149B)		ox (A16) (LRR K, L, R)
Black His				_		or Peat (S3) (LRR K, L, R)
	n Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)	Dark Surface (S7	
	Layers (A5)			Depleted Matrix (F3)	Polyvalue Below	Surface (S8) (LRR K, L)
	Below Dark Su		11)	Redox Dark Surface (F6)	Thin Dark Surface	e (S9) (LRR K, L)
	rk Surface (A12)			Depleted Dark Surface (F7)	Iron-Manganese	Masses (F12) (LRR K, L, R)
	uck Mineral (S1)			Redox Depressions (F8)	Piedmont Floodp	lain Soils (F19) (MLRA 149B)
	eyed Matrix (S4)			Mesic Spodic (TA	6) (MLRA 144A, 145, 149B)
	edox (S5)				Red Parent Mater	rial (TF2)
	Matrix (S6)		1 (00)		Very Shallow Dar	k Surface (TF12)
	face (S7) (LRR I				Other (Explain in	Remarks)
³ Indicators of	of hydrophytic ve	egetatio	n and wetla	and hydrology must be present, unless disturbed or prol	plematic.	
Restrictive I	ayer (if obser	ved):				
Type: B	edrock					
Depth (ind	ches): 16				Hydric Soil Present?	Yes 🔾 No 🖲
Remarks:						
Remarks.						



AN37 Wetand

Project/Site: Antrim Wind Project		City/County: Antrim		Sampling Date: 27-Sep-11		
Applicant/Owner: Eolian Renewable E	Energy, LLC	S	tate: NH	Sampling Point:	an38 wetland	
Investigator(s): AF JG		Section, Township, Range	e: S. T.	R.		
Landform (hillslope, terrace, etc.):	Terrace	Local relief (concave, convex	, none): flat	Slope:	0.0 % / 0.0	
Subregion (LRR or MLRA):	Lat.:	Lo	ing.:	Dat	um:	
Soil Map Unit Name:			NWI classi	ification: PFO/PSS		
Are Vegetation , Soil Are Vegetation , Soil Summary of Findings - At	, or Hydrology naturally	problematic? (If needed	al Circumstances" d, explain any answ DNS, transects	vers in Remarks.)		
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes ● No ○ Yes ● No ○ Yes ● No ○	Is the Sampled Area within a Wetland?	Yes 🖲 No 🤇	\supset		
	ocedures here or in a separate repo ledge pocket on West side of ridge	•				

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)
Primary Indicators (minimum of one required;	Surface Soil Cracks (B6)	
✓ Surface Water (A1)	✓ Water-Stained Leaves (B9)	Drainage Patterns (B10)
✓ High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2)		Saturation Visible on Aerial Imagery (C9)
Drift deposits (B3)	Oxidized Rhizospheres along Living Roots (C3)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)	
Iron Deposits (B5)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)
	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	Uther (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)		✓ FAC-neutral Test (D5)
Field Observations: Surface Water Present? Yes No		
	Depth (inches): <u>12</u>	
Water Table Present? Yes No	Depth (inches):0	drology Present? Yes 🖲 No 🔾
Saturation Present? Yes • No •	Depth (inches):0	drology Present? Yes No
Describe Recorded Data (stream gauge, monito	ring well, aerial photos, previous inspections), if ava	ailable:
Remarks:		

	110	Dominant Species?		Sampling Point: an38 wetland
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
1. Acer rubrum	20	✔ 100.0%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)
2.	0	0.0%		
3	0	0.0%		Total Number of Dominant Species Across All Strata: 4 (B)
4	0	0.0%		Species Across All Strata: (B)
5		0.0%		Percent of dominant Species
6		0.0%		That Are OBL, FACW, or FAC:(A/B)
7	0	0.0%		Prevalence Index worksheet:
1		= Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15')				$\begin{array}{c c c c c c c c c c c c c c c c c c c $
1. Ilex verticillata	50	100.0%	FACW+	
2.	0	0.0%		
3.		0.0%		FAC species $20 \times 3 = 60$
4	0	0.0%		FACU species $0 \times 4 = 0$
5.	0	0.0%		UPL species x 5 =
6.	0	0.0%		Column Totals:98(A)213(B)
7.	0	0.0%		Prevalence Index = $B/A = 2.173$
··		= Total Cover		
Herb Stratum (Plot size: 5')				Hydrophytic Vegetation Indicators:
1.Osmunda cinnamomea	10	35.7%	FACW	Rapid Test for Hydrophytic Vegetation
2. Iris versicolor	3	10.7%	OBL	Dominance Test is > 50%
3. Coptis trifolia	15	53.6%	FACW	✓ Prevalence Index is $\leq 3.0^{1}$
4.	0	0.0%		Morphological Adaptations ¹ (Provide supporting
5.	0	0.0%		data in Remarks or on a separate sheet)
6.	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
7.	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must
8.	0	0.0%		be present, unless disturbed or problematic.
9.				Definitions of Vegetation Strata:
10.	0	0.0%		
11.	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
	0	0.0%		at breast height (DBH), regardless of height.
12	0	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)	28	= Total Cover		greater than 3.28 ft (1m) tall
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0	0.0%		height.
	0	= Total Cover		
				Hydrophytic Vegetation
				Present? Yes • No O
Remarks: (Include photo numbers here or on a separate she	ot)			
remarks. (Include proto numbers here of on a separate sne				

Depth		Matrix		Redox Features	_	
(inches)	Color (%	Color (moist) % Type 1 Loc		Remarks
0-12	2.5Y	2/1	100%		Muck	
12+	2.5Y	5/1	100%		Gravelly Sand	
¹ Type: C=Co	ncentration. D)=Depletio	n. RM=Red	uced Matrix, CS=Covered or Coated Sand Grains 2	Location: PL=Pore Lining.	M=Matrix
Hydric Soil	Indicators:				Indicators for Pr	oblematic Hydric Soils : ³
Histosol				Polyvalue Below Surface (S8) (LRR R,		
_	ipedon (A2)			MLRA 149B)		10) (LRR K, L, MLRA 149B)
Black His				Thin Dark Surface (S9) (LRR R, MLRA 149E	y	Redox (A16) (LRR K, L, R)
	n Sulfide (A4))		Loamy Mucky Mineral (F1) LRR K, L)		eat or Peat (S3) (LRR K, L, R)
_	Layers (A5)			Loamy Gleyed Matrix (F2)		(S7) (LRR K, L)
_	Below Dark	Surface (A	.11)	Depleted Matrix (F3)		ow Surface (S8) (LRR K, L) face (S9) (LRR K, L)
_	irk Surface (A			Redox Dark Surface (F6)		ise Masses (F12) (LRR K, L, R)
_	uck Mineral (S			Depleted Dark Surface (F7)		odplain Soils (F19) (MLRA 149B)
	leyed Matrix (Redox Depressions (F8)	_	(TA6) (MLRA 144A, 145, 149B)
	edox (S5)				Red Parent Ma	
	Matrix (S6)				_	Dark Surface (TF12)
	face (S7) (LR	r r, mlra	A 149B)		Other (Explain	
³ Indicators	of hydrophytic	vogotatio	n and wate	nd hydrology must be present, unless disturbed or p		
				ind hydrology must be present, diffess disturbed of p		
Restrictive I	Layer (if obs	served):				
Туре:						t? Yes ● No ◯
Depth (in	ches):				Hydric Soil Presen	tr Yes Vo U
Remarks:						

Investigator(s): AF JG Section, Township, Range: S. T. R. Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): undulating Slope: 25.0 G Subregion (LRR or MLRA): Lat.: Long.: Datum: Soil Map Unit Name: NWI classification: NWI classification: Are climatic/hydrologic conditions on the site typical for this time of year? Yes Image: No (If no, explain in Remarks.) Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes Image: Networks.) Submary of Findings - Attach site map showing sampling point locations, transects, important feature	upland						
Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): undulating Slope: 25.0 ° Subregion (LRR or MLRA): Lat.: Long.: Datum: Soil Map Unit Name: NWI classification:	5 / <u>14.0</u>						
Subregion (LRR or MLRA): Lat.: Long.: Datum: Soil Map Unit Name: NWI classification: NWI classification: Are climatic/hydrologic conditions on the site typical for this time of year? Yes I No (If no, explain in Remarks.) Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes I 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 feature	6 / 14.0						
Soil Map Unit Name: NWI classification: Are climatic/hydrologic conditions on the site typical for this time of year? Yes							
Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.) Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) Summary of Findings - Attach site map showing sampling point locations, transects, important feature							
Are Vegetation , Soil , or Hydrology asignificantly disturbed? Are "Normal Circumstances" present? Yes Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) Summary of Findings - Attach site map showing sampling point locations, transects, important feature	NWI classification:						
Hydrophytic Vegetation Present? Yes No Is the Sampled Area within a Wetland? Yes No Hydric Soil Present? Yes No Is the Sampled Area within a Wetland? Yes No							

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)						
Primary Indicators (minimum of one required	l; check all that apply)	Surface Soil Cracks (B6)						
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)						
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)						
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)						
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)						
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)						
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)						
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)						
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)						
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)						
Sparsely Vegetated Concave Surface (B8)		FAC-neutral Test (D5)						
Field Observations:								
Surface Water Present? Yes O No 🖲	Depth (inches):							
Water Table Present? Yes O No 🖲								
Saturation Present? (includes capillary fringe) Yes O No O Depth (inches): Wetland Hydrology Present? Yes O No O								
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:								
Remarks:								

	int5	Dominant Species?		Sampling Point: AN38 upland
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
	33	34.4%	FACU	Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)
	22	 ✓ 34.4% 	FACU	
2 Ourse a tra	45	15.6%	FACU-	Total Number of Dominant
4				Species Across All Strata: 5 (B)
4. Tsuga canadensis			FACU	Percent of dominant Species
5	0	0.0%		That Are OBL, FACW, or FAC: 0.0% (A/B)
6		0.0%		
7		0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	96	= Total Cove	r	Total % Cover of: Multiply by:
1. Fagus grandifolia	25	100.0%	FACU	OBL species $0 \times 1 = 0$
2.		0.0%		FACW species $0 \times 2 = 0$
3.	0	0.0%		FAC species $0 \times 3 = 0$
4	0	0.0%		FACU speciles 123 x 4 = 492
5	0	0.0%		UPL species x 5 =
56.		0.0%		Column Totals: 123 (A) 492 (B)
7		0.0%		
1				Prevalence Index = B/A = 4.000
Herb Stratum (Plot size: 5')	25	= Total Cove	ſ	Hydrophytic Vegetation Indicators:
1.Quercus rubra	1	50.0%	FACU-	Rapid Test for Hydrophytic Vegetation
2.Fagus grandifolia	1	50.0%	FACU	Dominance Test is > 50%
3.	0	0.0%	1400	☐ Prevalence Index is ≤3.0 1
4.	0	0.0%		Morphological Adaptations ¹ (Provide supporting
5.	0	0.0%		data in Remarks or on a separate sheet)
6.	0	0.0%		\Box Problematic Hydrophytic Vegetation ¹ (Explain)
7.				¹ Indicators of hydric soil and wetland hydrology must
8.	0			be present, unless disturbed or problematic.
o <u>.</u> 9.	0	0.0%		Definitions of Vegetation Strata:
	0	0.0%		
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0	0.0%		at breast height (DBH), regardless of height.
12	0	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and
_Woody Vine Stratum (Plot size:)	2	= Total Cove	r	greater than 3.28 ft (1m) tall
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0	0.0%		height.
	0	= Total Cove	r	
				Hydrophytic Vegetation
				Present? Yes \bigcirc No \bigcirc
Remarks: (Include photo numbers here or on a separate she	et)			
Remarks: (Include proto numbers here of on a separate she	eet.)			

(inches)		Matrix	- ~ -	Redox Features	- Tt	Demand
0 F	Color (n		%	Color (moist)		Remarks
0-5	10YR	3/2	100%		Loam	
5-7	2.5Y	6/1	100%		Fine Sandy Loam	
7-14	10YR	4/4	100%		Sandy Loam	
14-20	10YR	4/6	100%		Sandy Loam	
Type: C=Con	centration. D=	=Depletic	n. RM=Red	uced Matrix, CS=Covered or Coated Sand Grains ² Loca	ation: PL=Pore Lining. M=M	atrix
Hydric Soil I					ī	ematic Hydric Soils : ³
Histosol (Polyvalue Below Surface (S8) (LRR R,		(LRR K, L, MLRA 149B)
Histic Epi	pedon (A2)			MLRA 149B)		x (A16) (LRR K, L, R)
Black Hist	tic (A3)			☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)		or Peat (S3) (LRR K, L, R)
Hydroger	Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)	Dark Surface (S7)	
Stratified	Layers (A5)			Loamy Gleyed Matrix (F2)		urface (S8) (LRR K, L)
_	Below Dark S		.11)	Depleted Matrix (F3)	Thin Dark Surface	
	k Surface (A1			Redox Dark Surface (F6)		lasses (F12) (LRR K, L, R)
Sandy Mu	ick Mineral (S	1)		Depleted Dark Surface (F7)		in Soils (F19) (MLRA 149B)
_	eyed Matrix (S	54)		Redox Depressions (F8)	_) (MLRA 144A, 145, 149B)
Sandy Re					Red Parent Materi	al (TF2)
	Matrix (S6)				Very Shallow Dark	Surface (TF12)
Dark Surf	ace (S7) (LRR	R, MLRA	A 149B)		Other (Explain in F	Remarks)
³ Indicators o	f hydrophytic	vegetatio	n and wetla	nd hydrology must be present, unless disturbed or probl	ematic.	
		erved):				
	ayer (if obse					~ ~ ~
	ayer (if obse					
Restrictive L					Hydric Soil Present?	Yes 🔾 🛛 No 🖲
Restrictive L Type: Depth (inc					Hydric Soil Present?	Yes U No 🔍
Restrictive L Type:					Hydric Soil Present?	Yes 🔾 No 🔍
Restrictive L Type: Depth (inc					Hydric Soil Present?	Yes 🔾 No 🖲
Restrictive L Type: Depth (inc					Hydric Soil Present?	Yes 🔾 No 🗨
Restrictive L Type: Depth (inc					Hydric Soil Present?	Yes 🔾 No 🖲
Restrictive L Type: Depth (inc					Hydric Soil Present?	Yes 🔾 No 🗨
Restrictive L Type: Depth (inc					Hydric Soil Present?	Yes 🔾 No 🗨
Restrictive L Type: Depth (inc					Hydric Soil Present?	Yes 🔾 No 🗨
Restrictive L Type: Depth (inc					Hydric Soil Present?	Yes U No O
Restrictive L Type: Depth (inc					Hydric Soil Present?	Yes U No 🔍
Restrictive L Type: Depth (inc					Hydric Soil Present?	Yes 🔾 No 🔍
Restrictive L Type: Depth (inc					Hydric Soil Present?	Yes U No O
Restrictive L Type: Depth (inc					Hydric Soil Present?	Yes U No O
Restrictive L Type: Depth (inc					Hydric Soil Present?	Yes U No O
Restrictive L Type: Depth (inc					Hydric Soil Present?	Yes U No O
Restrictive L Type: Depth (inc					Hydric Soil Present?	Yes U No 🔍
Restrictive L Type: Depth (inc					Hydric Soil Present?	Yes U No 🔍
Restrictive L Type: Depth (inc					Hydric Soil Present?	Yes U No 🔍
Restrictive L Type: Depth (inc					Hydric Soil Present?	Yes U No O



AN38 Wetland



AN38 Upland



AN38 Wetland



AN38 Wetland

						•					
Project/Site: Antrim Wind Project	City/County:	Antrim			Sampling Date: 30-Nov-11						
Applicant/Owner: Eolian Renewable E	nergy, LLC			State:	NH	Sampling Point:	AN41	up			
Investigator(s): AF JG	Section, T	ownship, Rang	e: S.	т.	R.						
Landform (hillslope, terrace, etc.):	Toeslope	Local relief (c	oncave, conve	k, none	e): convex	Slope:	0.0%/	0.0 °			
Subregion (LRR or MLRA): LRR R	Lat.:	Long.:				Dat	um:				
Soil Map Unit Name:	Soil Map Unit Name:				NWI classification:						
Are climatic/hydrologic conditions of Are Vegetation , Soil Are Vegetation , Soil Summary of Findings - At	, or Hydrology Significant , or Hydrology naturally	tly disturbed? problematic?	(If neede	nal Cir d, exp	•	present? Yes (etc.			
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes No Yes No Yes No No		e Sampled Area n a Wetland?	3 Y	fes \bigcirc No $($	٢					
Remarks: (Explain alternative pro	cedures here or in a separate repo	ort.)									

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)					
Primary Indicators (minimum of one required;	check all that apply)	Surface Soil Cracks (B6)					
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)					
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)					
Saturation (A3)	Marl Deposits (B15)	Dry Season Water Table (C2)					
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)					
Sediment Deposits (B2)	Oxidized Rhizospheres along Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)					
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)					
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)					
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)					
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)					
Sparsely Vegetated Concave Surface (B8)		FAC-neutral Test (D5)					
Field Observations:							
Surface Water Present? Yes O No 🖲	Depth (inches):						
Water Table Present? Yes O No 💿	Depth (inches):						
Saturation Present? (includes capillary fringe) Yes O No O Depth (inches): Wetland Hydrology Present? Yes O No O							
Describe Recorded Data (stream gauge, monitor	pring well, aerial photos, previous inspections), if ava	ilable:					
Remarks:							

	11.5	Dominant Species?		Sampling Point: AN41up
Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
1. Acer rubrum	20	33.3%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)
2. Fagus grandifolia	15	25.0%	FACU	
3. Picea rubens	10	16.7%	FACU	Total Number of Dominant Species Across All Strata: 10 (B)
4	15	25.0%	FACU-	Species Across All Strata: 10 (B)
4. <u>Quercus rubra</u> 5		0.0%	11100	Percent of dominant Species
6	0	0.0%		That Are OBL, FACW, or FAC: 20.0% (A/B)
7	0	0.0%		Prevalence Index worksheet:
7				
Sapling/Shrub Stratum (Plot size: 15')	60	= Total Cove	r	
1. Fagus grandifolia	10	40.0%	FACU	
2. Picea rubens	10	40.0%	FACU	FACW species $0 \times 2 = 0$
3. Pinus strobus	5	20.0%	FACU	FAC species $39 \times 3 = 117$
4.	0	0.0%		FACU species 120 x 4 = 480
5	0	0.0%		UPL species x 5 =
6	0	0.0%		Column Totals: 159 (A) 597 (B)
6	0	0.0%		
7		-		Prevalence Index = B/A = <u>3.755</u>
Herb Stratum (Plot size: 5')	25	= Total Cove	ſ	Hydrophytic Vegetation Indicators:
1.Dryopteris intermedia	15	20.3%	FACU	Rapid Test for Hydrophytic Vegetation
2 Caulthania maayumhana	15	20.3%	FACU	Dominance Test is > 50%
3. Thelypteris noveboracensis	19	25.7%	FAC	Prevalence Index is \leq 3.0 1
1		33.8%	FACU	Morphological Adaptations ¹ (Provide supporting
4.Lycopodium obscurum 5.			FACU	data in Remarks or on a separate sheet)
5 6.	0			Problematic Hydrophytic Vegetation ¹ (Explain)
	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must
7	0	0.0%		be present, unless disturbed or problematic.
8	0	0.0%		Definitions of Vegetation Strata:
9	0	0.0%		bernitions of vegetation strata.
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0	0.0%		at breast height (DBH), regardless of height.
12	0	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)	74	= Total Cove	r	greater than 3.28 ft (1m) tall
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0	0.0%		height.
	0	= Total Cove	r	
			-	
				Hydrophytic
				Vegetation Present? Yes O No O
				Present? Yes V NO 🛡
				1
Remarks: (Include photo numbers here or on a separate she	et.)			

Depth Matrix Redox Features (inches) % Type 1 Loc2 Texture Remarks 0-5 10YR 3/2 100%				the depth	needed to do				onfirm the	absence of indicators.)	
5-12 10/R 4/3 100% Sandy Loam 12-15 2.5Y 5/2 95% 10/R 4/6 5% C M Sandy Loam 15+		Color (r	Matrix noist)	~ %	Color (m				Loc ²	Texture	Remarks
12-15 2.5Y 5/2 95% 10YR 4/6 5% C M Sandy Loam 15+	0-5									Loam	
12-15 2.5Y 5/2 95% 10YR 4/6 5% C M Sandy Loam 15+	5-12	10YR	4/3	100%						Sandy Loam	
15+ Stony refusal 15+ </td <td></td> <td></td> <td></td> <td></td> <td>10VP</td> <td>1/6</td> <td>5%</td> <td></td> <td></td> <td></td> <td></td>					10VP	1/6	5%				
Image: Concentration. D-Depletion. RM-Reduced Matrix, CS=Covered or Coated Sand Grains *Location: PL=Pore Lining. M=Matrix Image: Concentration. D-Depletion. RM-Reduced Matrix, CS=Covered or Coated Sand Grains *Location: PL=Pore Lining. M=Matrix Image: Concentration. D-Depletion. RM-Reduced Matrix, CS=Covered or Coated Sand Grains *Location: PL=Pore Lining. M=Matrix Image: Concentration. D-Depletion. RM-Reduced Matrix, CS=Covered or Coated Sand Grains *Location: PL=Pore Lining. M=Matrix Image: Concentration. D-Depletion. RM-Reduced Matrix, CS=Covered or Coated Sand Grains *Location: PL=Pore Lining. M=Matrix Image: Concentration. D-Depletion. RM-Reduced Matrix, CS=Covered or Coated Sand Grains *Location: PL=Pore Lining. M=Matrix Image: Concentration. D-Depletion. RM-Reduced Matrix, CS=Covered or Coated Sand Grains *Location: PL=Pore Lining. M=Matrix Image: Concentration. D-Depletion. RM-Reduced Matrix, CS=Covered or Coated Sand Grains *Location: PL=Pore Lining. M=Matrix Image: Concentration. D-Depletion. RM-Reduced Matrix, CS=Covered or Coated Sand Grains *Location: PL=Pore Lining. M=Matrix Image: Concentration. D=Depletion. RM-Reduced Matrix, CS=Covered or Coated Sand Grains *Location: PL=Pore Lining. M=Matrix Image: Concentration. D=Depletion. RM-Reduced Matrix, CS=Covered or Coated Sand Grains *Location: PL=Pore Lining. M=Matrix Image: Concentration. D=Depletion. RM-Reduced Matrix, CS= Coast Praine Redox, Cis0 (LRR K, L, R) </td <td></td> <td>2.31</td> <td>5/2</td> <td>7370</td> <td></td> <td>470</td> <td>570</td> <td></td> <td></td> <td></td> <td>stony refusal</td>		2.31	5/2	7370		470	570				stony refusal
Hydric Soil Indicators: Indicators for Problematic Hydric Soils : ³ Histosol (A1) Polyvalue Below Surface (S8) (LRR R, MLRA 149B) Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) Hydriogen Sulfide (A4) Loamy Mucky Mineral (F1) LRR K, L) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Stripped Matrix (S6) WLRA 149B) Dark Surface (S7) (LRR R, MLRA 149B) Red Present, unless disturbed or problematic. Restrictive Layer (if observed): Type: Bouldery	15+										
Hydric Soil Indicators: Indicators for Problematic Hydric Soils : ³ Histosol (A1) Polyvalue Below Surface (S8) (LRR R, MLRA 149B) Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) Hydriogen Sulfide (A4) Loamy Mucky Mineral (F1) LRR K, L) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Stripped Matrix (S6) WLRA 149B) Dark Surface (S7) (LRR R, MLRA 149B) Red Present, unless disturbed or problematic. Restrictive Layer (if observed): Type: Bouldery											
Hydric Soil Indicators: Indicators for Problematic Hydric Soils : ³ Histosol (A1) Polyvalue Below Surface (S8) (LRR R, MLRA 149B) Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) Hydriogen Sulfide (A4) Loamy Mucky Mineral (F1) LRR K, L) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Stripped Matrix (S6) WLRA 149B) Dark Surface (S7) (LRR R, MLRA 149B) Red Present, unless disturbed or problematic. Restrictive Layer (if observed): Type: Bouldery											
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Hydric Soil Indicators: Indicators for Problematic Hydric Soils : ³ Histosol (A1) Polyvalue Below Surface (S8) (LRR R, MLRA 149B) Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) Hydriogen Sulfide (A4) Loamy Mucky Mineral (F1) LRR K, L) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Stripped Matrix (S6) WLRA 149B) Dark Surface (S7) (LRR R, MLRA 149B) Red Present, unless disturbed or problematic. Restrictive Layer (if observed): Type: Bouldery											
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Histosol (A1) Polyvalue Below Surface (S8) (LRR R, MLRA 149B) 2 cm Muck (A10) (LRR K, L, MLRA 149B) Histic Epipedon (A2) Thin Dark Surface (S9) (LRR R, MLRA 149B) Coast Prairie Redox (A16) (LRR K, L, R) Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) Coast Prairie Redox (A16) (LRR K, L, R) Stratified Layers (A5) Loamy Mucky Mineral (F1) LRR K, L) Dark Surface (S7) (LRR K, L) Depleted Below Dark Surface (A11) Depleted Matrix (F2) Polyvalue Below Surface (S9) (LRR K, L) Thick Dark Surface (A12) Redox Dark Surface (F6) Thin Dark Surface (F7) Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Piedmont Floodplain Soils (F19) (MLRA 149B) Sandy Redox (S5) Sandy Redox (S5) Redox Depressions (F8) Mesic Spodic (TA6) (MLRA 144A, 145, 149B) 3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Very Shallow Dark Surface (TF12) Type: Bouldery Utdate Scil Deponental Nu (Nu (Nu (Nu (Nu (Nu (Nu (Nu (Nu (Nu (2
Implicit and the set of							v Surface (S8) (LRR F	R,		lematic rigune sons .
Black Histic (A3) Immin Dark Surface (S9) (LRR K, MLRA 1496) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) LRR K, L) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Muck Mineral (S1) Depleted Dark Surface (F7) Sandy Redox (S5) Redox Depressions (F8) Stripped Matrix (S6) Redox Depressions (F8) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Other (Explain in Remarks)	Histic Ep	oipedon (A2)					() ()				
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Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS) Image: Series (KS)<											
Depicted below bark surface (r11) Thick Dark Surface (A12) Thick Dark Surface (A12) Depieted Dark Surface (F6) Iron-Manganese Masses (F12) (LRR K, L, R) Piedmont Floodplain Soils (F19) (MLRA 149B) Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LRR R, MLRA 149B) 3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type: Bouldery										Polyvalue Below	Surface (S8) (LRR K, L)
Index Burk Sourdee (M2) Depleted Dark Surface (F7) Iron-Manganese Masses (F12) (LRR K, L, R) Sandy Muck Mineral (S1) Redox Depressions (F8) Piedmont Floodplain Soils (F19) (MLRA 149B) Sandy Redox (S5) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Dark Surface (S7) (LRR R, MLRA 149B) Other (Explain in Remarks) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Other (Explain in Remarks) Restrictive Layer (if observed): Type: Bouldery Muck Direction Content for the second of the seco				.11)						Thin Dark Surfac	e (S9) (LRR K, L)
Image: Sandy Widek Willerah (S1) Redox Depressions (F8) Piedmont Floodplain Soils (F19) (MLRA 149B) Image: Sandy Gleyed Matrix (S4) Mesic Spodic (TA6) (MLRA 144A, 145, 149B) Image: Sandy Redox (S5) Red Parent Material (TF2) Image: Stripped Matrix (S6) Very Shallow Dark Surface (TF12) Image: Dark Surface (S7) (LRR R, MLRA 149B) Other (Explain in Remarks) Image: All the sail Depresent of the sail Depresent (If observed): Type: Type: Bouldery								7)			
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Stripped Matrix (S6) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. 3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type: Bouldery			54)								
Dark Surface (S7) (LRR R, MLRA 149B) Other (Explain in Remarks) Other (Explain in Remarks) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type: Bouldery											
³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type: Bouldery Underin Sail Present2 - Vers - Its -			r R, MLRA	A 149B)							
Restrictive Layer (if observed): Type: Bouldery	³ Indicators	of hydrophytic	vegetatio	n and wetla	nd hydrology r	must he n	resent un	less disturk	ed or probl		Kemarks)
Type: Bouldery					ia nyarology i						
			ervea):								
Deptil (inclies). 15										Hydric Soil Present?	Yes 🔿 No 🖲
Demention	Remarks:	15									

					0		
Project/Site: Antrim Wind Project		City/County:	Antrim		Sampling Date: 3	0-Nov-11	
Applicant/Owner: Eolian Renewable E	nergy, LLC		State: NH		Sampling Point:	AN41wet	
Investigator(s): AF JG		Section, Township, Range: S. T. R.					
Landform (hillslope, terrace, etc.):	Toeslope	Local relief (concave, convex, none): concave Slope: 0.0 % /					
Subregion (LRR or MLRA): LRR R	Lat.:	Long.:			Dat	um:	
Soil Map Unit Name:		NWI classification: PFO					
Are Vegetation, Soil Summary of Findings - At	, , , , , ,	problematic? sampling p	(If needed, explain	5	2	atures, etc.	
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes No Yes No Yes No Yes No		e Sampled Area n a Wetland? Yes	: • No C)		
Remarks: (Explain alternative pro- Isolated PFO at toe of slope in a b		ort.)					

Wetland Hydrology Indicat	tors:					Secondary Indicators (minimum of 2 required)		
Primary Indicators (minim	um of one	required;	check all that apply)			Surface Soil Cracks (B6)		
Surface Water (A1)			Water-Stained Leaves	s (B9)		Drainage Patterns (B10)		
High Water Table (A2)			Aquatic Fauna (B13)	5 (27)		Moss Trim Lines (B16)		
Saturation (A3)			Marl Deposits (B15)			Dry Season Water Table (C2)		
Water Marks (B1)			Hydrogen Sulfide Odd	or (C1)		Crayfish Burrows (C8)		
Sediment Deposits (B2) Oxidized Rhizospheres along Living Roots (C3) Saturation Visible on Aerial Imagery (C9)								
Drift deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1)								
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2)								
Iron Deposits (B5)			Thin Muck Surface (C		()	Shallow Aquitard (D3)		
Inundation Visible on Aeri	ial Imagery ((B7)	Other (Explain in Ren			Microtopographic Relief (D4)		
Sparsely Vegetated Conca	ave Surface	(B8)		narksy		✓ FAC-neutral Test (D5)		
Field Observations:								
Surface Water Present?	Yes \bigcirc	No 🖲	Depth (inches):					
Water Table Present?	Yes 🖲	No \bigcirc	Depth (inches):	0				
Saturation Present? Yes No Depth (inches): 0 Wetland Hydrology Present? Yes No O								
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:								
Remarks:								
Sphagnum 50% cover.								
L								

	1113	Dominant Species?		Sampling Point: AN41wet
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat.	Indicator Status	Dominance Test worksheet:
1. Acer rubrum	33	76.7%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)
		23.3%	FACW	
		0.0%	THOW	Total Number of Dominant
		0.0%		Species Across All Strata: 5 (B)
4	0	0.0%		Percent of dominant Species
5		0.0%		That Are OBL, FACW, or FAC: 100.0% (A/B)
6		0.0%		
7				Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	43	= Total Cove	r	Total % Cover of: Multiply by:
1. Acer rubrum	10	55.6%	FAC	OBL species $0 \times 1 = 0$
2. Betula alleghaniensis		✓ 44.4%	FAC	FACW species $60 \times 2 = 120$
3.		0.0%		FAC speci es $51 \times 3 = 153$
4		0.0%		FACU species $0 \times 4 = 0$
5	0	0.0%		UPL species $0 \times 5 = 0$
56.		0.0%		Column Totals: 111 (A) 273 (B)
7		0.0%		·
/		-		Prevalence Index = B/A = 2.459
Herb Stratum (Plot size: 5')	18	= Total Cove	r	Hydrophytic Vegetation Indicators:
1.Osmunda cinnamomea	50	✔ 100.0%	FACW	Rapid Test for Hydrophytic Vegetation
2.		0.0%		✓ Dominance Test is > 50%
3.	0	0.0%		✓ Prevalence Index is ≤3.0 1
4.		0.0%		Morphological Adaptations ¹ (Provide supporting
5.				data in Remarks or on a separate sheet)
5 6.	0	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
	0	0.0%		¹ Indicators of hydric soil and wetland hydrology must
7	0	0.0%		be present, unless disturbed or problematic.
8	0	0.0%		Definitions of Vegetation Strata:
9	0	0.0%		Demintions of Vegetation Strata.
10	0	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0	0.0%		at breast height (DBH), regardless of height.
12	0	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and
_Woody Vine Stratum (Plot size:)	50	= Total Cove	r	greater than 3.28 ft (1m) tall.
1	0	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0	0.0%		size, and woody plants less than 3.28 ft tall.
3	0	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0	0.0%		height.
	0	= Total Cove	r	
				Hydrophytic Vegetation Present? Yes No
				Present? Yes VI VI
Remarks: (Include photo numbers here or on a separate she	eet.)			

Profile Desc	ription: (Des	scribe to	the depth	needed to document	the indicator	or confirm th	ne absence of	indicators.)			
Depth (inchor)	• • • •	Matrix			dox Features				_		
(inches)	Color (r	•	%	Color (moist)	<u>%</u> T	/pe ¹ Loc ²			Ren muck	narks	
0-9	2.5Y	2/1	100%				sapric			naaki na	
9+	10YR	2/2	100%				Sandy Loa	am	organic st	reaking	
1											
		=Depletio	n. RM=Red	uced Matrix, CS=Cover	ea or Coated Sa	nd Grains ² L	ocation: PL=P	ore Lining. M=M	atrix		
Hydric Soil							Indica	ators for Proble	ematic Hydri	c Soils : ³	
Histosol				Polyvalue Belo MLRA 149B)	w Surface (S8)	(LRR R,	2	cm Muck (A10) ((LRR K, L, MLF	RA 149B)	
Histic Ep	ipedon (A2)							oast Prairie Redo			
Black His	tic (A3)			_	ace (S9) (LRR						
Hydroge	n Sulfide (A4)			_	Vineral (F1) LRI	₹K, L)		5 cm Mucky Peat or Peat (S3) (LRR K, L, R) Dark Surface (S7) (LRR K, L)			
Stratified	Layers (A5)			Loamy Gleyed				lyvalue Below Si		RR K. L)	
Depleted	Below Dark S	Surface (A	.11)	Depleted Matri				nin Dark Surface			
🗌 Thick Da	rk Surface (A1	12)		Redox Dark Su				on-Manganese M			
Sandy M	uck Mineral (S	51)		Depleted Dark				edmont Floodpla			
Sandy Gl	eyed Matrix (S	S4)		Redox Depress	ions (F8)						
Sandy Re	edox (S5)							Mesic Spodic (TA6) (MLRA 144A, 145, 149B)			
Stripped	Matrix (S6)							Red Parent Material (TF2)			
	face (S7) (LRF	R R, MLRA	A 149B)					 Very Shallow Dark Surface (TF12) Other (Explain in Remarks) 			
31	£							пет (схратт п в	(emaiks)		
	or nyaropnytic	vegetatio	in and wetta	nd hydrology must be p	present, unless	disturbed or pro	oblematic.				
Restrictive I	ayer (if obs	erved):									
Туре:											
Depth (ind	ches):						Hydric S	Soil Present?	Yes 🖲	No \bigcirc	
Remarks:											



AN41 Wetland

EXHIBIT 6

VERNAL POOL REPORT

VERNAL POOL REPORT

For Antrim Wind Energy Project Town of Antrim Hillsborough County, New Hampshire

Prepared for:

Antrim Wind Energy, LLC 155 Fleet Street Portsmouth, NH 03801



Prepared by:

TRC ENVIRONMENTAL CORPORATION 10 Maxwell Drive, Suite 200 Clifton Park, New York 12065

January 2012

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1.0 INTRODUCTION

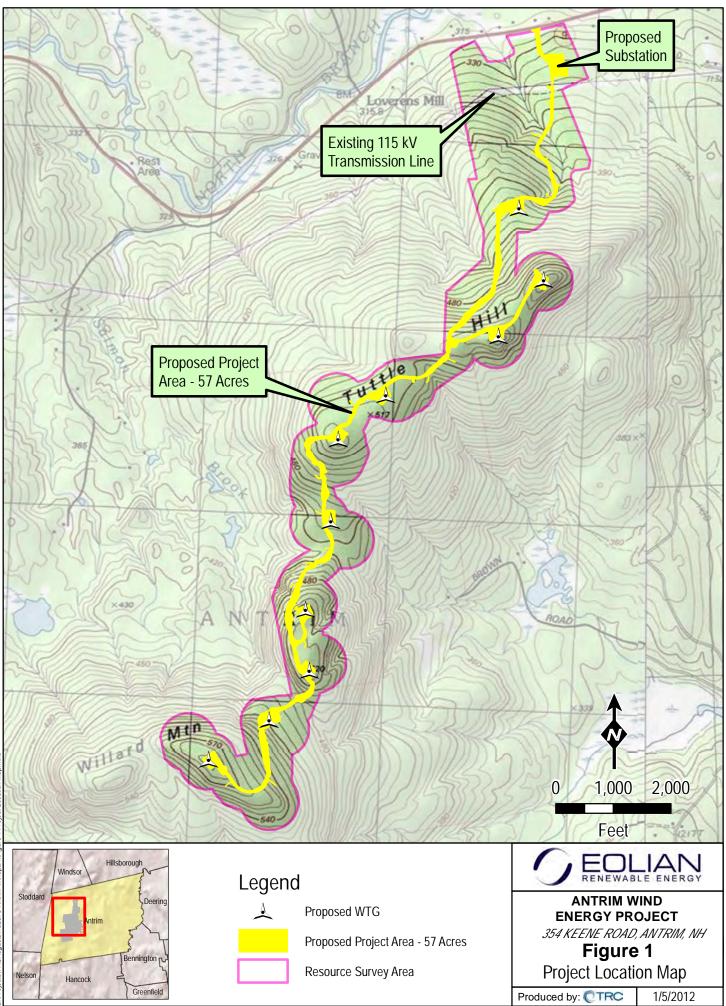
This vernal pool report has been prepared by TRC for Antrim Wind Energy, LLC (AWE) in support of state and federal environmental permit applications. Antrim Wind Energy LLC (AWE) is proposing to construct the Antrim Wind Energy Project (Project) on Tuttle Hill and Willard Mountain in the Town of Antrim, Hillsborough Country, New Hampshire. The proposed Project is sited entirely on privately owned land that is leased by AWE. The proposed Antrim Wind Energy Project involves the construction of 10 wind turbines, an electrical collection system and interconnection substation, approximately 4 miles of new access road, and an operations and maintenance building. There will be no new electrical transmission lines, other than collector system lines, constructed as part of this Project. The total direct impact for the access roads, the turbine pads, and electrical collector system will be approximately 57 acres.

The proposed project is sited on the ridges of Tuttle Hill and Willard Mountain which are oriented east-northeast to west-southwest. The ridges are approximately parallel to NH Route 9, which is about ³/₄ of a mile to the north. Between the ridgeline and Route 9 is an existing transmission corridor containing both an 115kV transmission line and a 34.5kV distribution circuit; the proposed Project will interconnect with the existing 115kV line. See Figure 1 on the following page for a map of the Project area and Project elements.

TRC Environmental Corporation (TRC) was retained by AWE to identify and delineate vernal pools within the project area to support the design, or layout, of the proposed facilities. TRC has prepared this vernal pool report on behalf of AWE to support the submittal of a Joint Application for a Permit (a U.S. Army Corps of Engineers (ACOE) and New Hampshire State wetlands permit).

TRC conducted vernal pool surveys within an approximately 409 acre survey area during May 2nd, 5th and 9th of 2011. Follow up visits were made to each pool during early June to confirm their condition (i.e., watered or dry). Additional survey was also performed during September in approximately 53 acres added to the Project survey area in several discreet sections to provide for expanded project design options. An additional potential vernal pool was identified in this area and will be revisited during the appropriate survey period in the spring of 2012 to confirm its function and spatial extents.

The following sections describe the vernal pool field survey methodology utilized.



\Projects\TRCAugusta\182878-Antrim Windpark\Figure 1 Project Location Map

2.0 VERNAL POOL SURVEY METHODOLOGY

For the purposes of the field effort, TRC adopted the vernal pool definitions as described by the USACE Programmatic General Permit (PGP) for the State of New Hampshire and the NHDES Administrative Rules Env-Wt 101.99 for identifying vernal pools and vernal pool habitat along the Project corridor. With the exception of minor differences, each agency has a similar definition of what constitutes a vernal pool. Each respective definition is provided below.

According to the ACOE NHPGP, vernal pools and vernal pool habitat consists of:

"VPs are confined basin depressions with water for two or more continuous months in the spring and/or summer, for which evidence of one of more of the following indicator vernal pools species: wood frogs (Rana sylvatica), mole salamanders (Ambystoma spp), and fairy shrimp (Eubranchipus spp) has been documented **OR** for which evidence of two or more of the following facultative organisms: caddisfly (Trichoptera) larvae casings, fingernail clams (Sphaeriidae), or amphibious snails (Basammatophora) and evidence that the pool does not contain an established reproducing fish population has been documented. Vernal pool habitat is the seasonal pool depression, seasonal pool envelope (100 FT radius from the VP edge) and seasonal pool terrestrial habitat (750 FT radius from the VP edge). The Corps will determine on a case-by-case basis which vernal pools are within their jurisdiction."

The NHDES wetlands Bureau defines a vernal pool in their Administrative Rules Env-Wt 101.106 as:

"a surface water or wetland, including an area intentionally created for purposes of compensatory mitigation, which provides breeding habitat for amphibians and invertebrates that have adapted to the unique environments provided by such pools and which:

- (a) Is not the result of on-going anthropogenic activities that are not intended to provide compensatory mitigation, including but not limited to:
 - (1) Gravel pit operations in a pit that has been mined at least every other year; and
 - (2) Logging and agricultural operations conducted in accordance with all applicable New Hampshire statutes and rules; and
- (b) Typically has the following characteristics:
 - (1) Cycles annually from flooded to dry conditions, although the hydroperiod, size, and shape of the pool might vary from year to year;
 - (2) Forms in a shallow depression or basin;
 - (3) Has no permanently flowing outlet;
 - (4) Holds water for at least 2 continuous months following spring ice-out;
 - (5) Lacks a viable fish population; and
 - (6) Supports one or more primary vernal pool indicators, or 3 or more secondary vernal pool indicators."

Primary vernal pool indicators in NH include wood frogs, mole salamanders and fairy shrimp. Secondary indicators include species of aquatic insects including the larvae of caddisfly, dragonfly, and damselfly; fingernail clams and certain aquatic beetles; and other specific species that inhabit vernal pools.

TRC utilized a comprehensive vernal pool survey protocol and field data forms found in the document "Identification and Documentation of Vernal Pools in New Hampshire", published by the New Hampshire Fish and Game Department Nongame and Endangered Wildlife Program (NHFGD 1997). In general, field surveys were conducted during the recommended timeframes for identifying amphibian egg masses and tabulating egg mass abundance. Peak breeding for wood frogs is generally earlier in the season, typically mid to late April, than that of the spotted and blue-spotted salamanders (ambystomid salamanders), typically in early May (Hunter & Calhoun 1999). Seasonal and weather conditions were also considered when applying these recommended survey timeframes as amphibian breeding can vary based on springtime conditions. For example, experiencing a cold spring versus a warm, wet spring could delay amphibian breeding for as much as two weeks and vice versa. Therefore, TRC attempted to conduct the surveys in early May of 2011 to capture the overlap of peak breeding of both the wood frogs and spotted salamanders.

2.1 General Field Survey Approach

Field surveys were conducted by a team of two qualified biologists familiar with vernal pool resources within New England. The team completed visual meanders surveys throughout the entire Project area. Each field crew was outfitted with the necessary field equipment to conduct a detailed survey and to thoroughly document each pool that was inventoried. Typical equipment consisted of hip/chest waders, polarized sunglasses, view tubes, dipnet, thermometer, fairy shrimp sampling equipment, and digital camera. For each pool, a standardized vernal pool determination field data form was completed, the vernal pool area was photo-documented, and the pool basin was located in the field using a global positioning system (GPS) unit. GPS data was specifically collected at the approximate perceived boundary of the highwater mark for all vernal pools exceeding approximately 10 feet in diameter.

2.2 Vernal Pool Species Observations

Egg mass surveys were conducted during the day time hours, preferably when the sun was out, between the hours of 9:00am to 3:00pm to the extent possible to maximize viewing opportunity within the pools. Two biologists began at one end of the pool and thoroughly searched the entire area simultaneously wading along the pool margin. The entire pool was searched (including the center) in this manner to ensure that all egg masses were tabulated. To reduce the possibility of overlooking or misidentifying egg masses, the field biologists worked together to observe, identify, and count egg masses. When agreement was reached regarding the species and number of egg masses within an individual pool, a data form and all other necessary pool documentation was completed (see Natural Resource Survey Map in Appendix A). As described in Section 2.0 above, each pool was examined twice during the survey period to document all vernal pool species utilizing the resource.

As with the egg mass surveys, surveys to document the presence/absence of fairy shrimp were also conducted concurrently. When optimal daytime conditions were not available or for pools with dark tannin stained water, field crews used dip nets and view tubes to search for fairy shrimp. When possible, sampling efforts were focused on sunny patches along the pool, as fairy shrimp often congregate in these areas.

Vernal pools were classified into one of three categories: (1) natural vernal pools; (2) potential vernal pools; and (3) non-jurisdictional features. The natural vernal pools were those pools as defined in Section 2.0 above that met the state criteria under the Administrative Rules. The potential pools were those pools that were identified outside of the indicator species breeding season as the scope of the project had changed after the initial vernal pool survey was performed. These pools had the abiotic characteristics as described in the state and federal definitions, but would require a visit in breeding season to confirm the presence of the indicator species use. The "non-jurisdictional feature" category included all other areas where amphibian breeding was documented but did not meet the state and federal definition of a vernal pool described in Section 2.0.

3.0 VERNAL POOL FIELD SURVEY RESULTS

Vernal pool surveys were conducted within the Project area on May 2nd, 5th and 9^{th of} 2011, with additional survey conducted in extra project area performed in September 2011. A total of 7 features were identified within the Project area. Of these, 5 were identified as Natural Vernal pools, 1 as a potential vernal pool (located in September), and 1 feature was designated as a non-jurisdictional amphibian breeding area. Mapping of the pools is provided on the Natural Resource Survey Map in Appendix A, and the field data forms and site photographs for each feature are provided in Appendix B. An abbreviated summary of the vernal pool data is provided in Table 1 below.

Pool Type	No. of Features Within the Project Survey Corridor			
Natural Vernal Pool	5			
Potential Vernal Pool	1			
Non-jurisdictional Feature	1			
TOTAL	7			

TABLE 1: SUMMARY OF VERNAL POOLS WITHIN ANTRIM WINDPARK

A summary of the vernal pool characteristics for each pool is provided in Table 2 below. In summary, only VP4 contained significant numbers of egg masses. Vernal Pool Data Sheets are included in Appendix B.

Pool ID	Date Surveyed	Natural Setting (y/n)	Indicator Species Observed	Facultative Species Observed	Holds Water For At Least Two Months (y/n)	Associated Wetland
VP1	5/2/2011	Y	Spotted Salamander – 8 egg masses Wood Frog – 5 egg masses Green Frog - Vocalization	Green frog - Vocalization	Y	AN1
VP2	5/5/2011	Y	Spotted Salamander – 16 egg masses Wood Frog – 1 egg mass		Y	AN4
VP3	5/5/2011	Y	Spotted Salamander – 9 egg masses Wood Frog – 5 egg masses	Red-spotted newt - 1 adult	Y	AN5
VP4	5/5/2011	Y	Spotted Salamander – 55 egg masses Wood Frog – 4 egg masses		Y	AN25
VP5	5/9/2011	Y	Spotted Salamander – 10 egg masses		Y	AN24
VP6	5/9/2011	Ν	Spotted Salamander – 9 egg masses		Ν	Upland
VP7	9/27/2011	Y	None Observed		Y	AN38

 TABLE 2: VERNAL POOL CHARACTERISTICS

Six of the pools observed occurred in natural isolated basins without an inlet or an outlet and no populations of predatory fish. Vernal Pools 1-5 and 7 are within isolated palustrine forested wetlands along the Tuttle Hill ridgeline and are located in depressions within the regional bedrock.

Vernal Pool 6 is located within a depression in an old woods road and is a man-made feature. This pool was also observed to be completely dry on June 6, 2011. No hydrophytic vegetation was observed in the vicinity of the pool depression and as a result is not a jurisdictional wetland. Therefore, the pool is considered a non-jurisdictional feature.

During the siting phase of the Project, several routing options were evaluated that were later rejected due to landowner or environmental concerns. During the spring and summer of 2011 when these particular route options were still under consideration, additional surveys for vernal pools were completed. As a result, one other feature (VP7) was identified within the current Project area. VP7 is located within an isolated forested wetland (Wetland AN38) west of proposed turbines 5 and 6. The wetland was observed to have an area of standing water approximately 1 foot deep and contained an abundance of shrubby vegetation, conducive of supporting egg attachment sites for pool breeding amphibians. An ephemeral outlet was observed draining to the northwest through a gap in the regional bedrock, but did not meet the criteria for a stream or wetland and did not have the necessary characteristics to support predatory fish populations. This potential vernal pool is very similar in character to the confirmed Vernal Pools 5 and 4, and therefore will be considered in a similar manner as those pools.

Although intensively surveyed for, no fairy shrimp were found or documented within any of the vernal pools. Furthermore, no rare or state-listed threatened or endangered species known to use vernal pools for at least one critical life stage were documented in any of the vernal pools found within the Project area. The field data forms and site photographs for these seven areas are provided in Appendix B.

4.0 VERNAL POOL IMPACTS

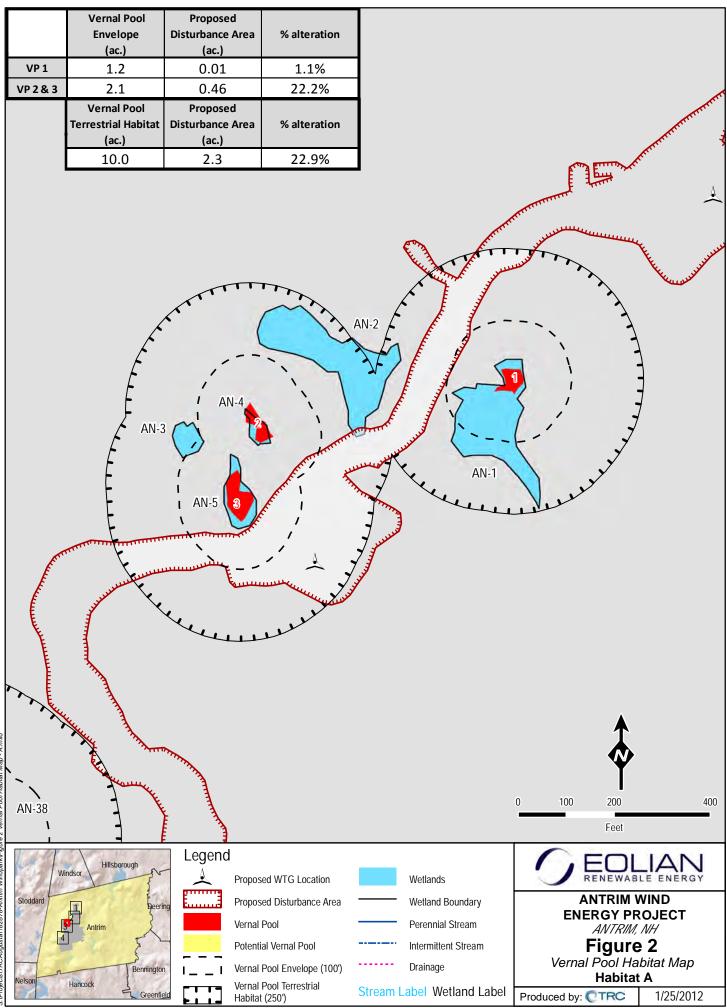
There are no impacts to vernal pool depressions. Impacts to vernal pools are indirect and are from road and turbine construction in areas adjacent to the pools. The indirect impacts to the 5 natural vernal pools (VP1-VP5) and the potential vernal pool (VP7) were all assessed. In discussions with Mark Kern from the U.S. Environmental Protection Agency and David Keddell from the Army Corps (during a site visit to the vernal pools December 13, 2011), the assessment of impacts should consider the project footprint within 250 feet of the pools, and the area within 100 feet of the vernal pool depression. The upland and wetland area within 250 feet and adjacent to the vernal pool is defined as vernal pool "terrestrial habitat", and the area within 100 feet of the pool is the vernal pool "envelope" (Calhoun and Klemens 2002; Calhoun and deMaynadier 2004). See Figure 2 for detailed maps of the vernal pools and the terrestrial habitat areas.

The vernal pools found on this site are in three distinct areas. Vernal pools 1, 2 and 3 are close to each other, and their terrestrial habitats overlap ("Habitat A"). Vernal pools 4 and 5 are also close to each other and their respective terrestrial habitat areas also overlap ("Habitat C"). Potential vernal pool VP7 terrestrial habitat does not overlap with any other vernal pool habitat ("Habitat B").

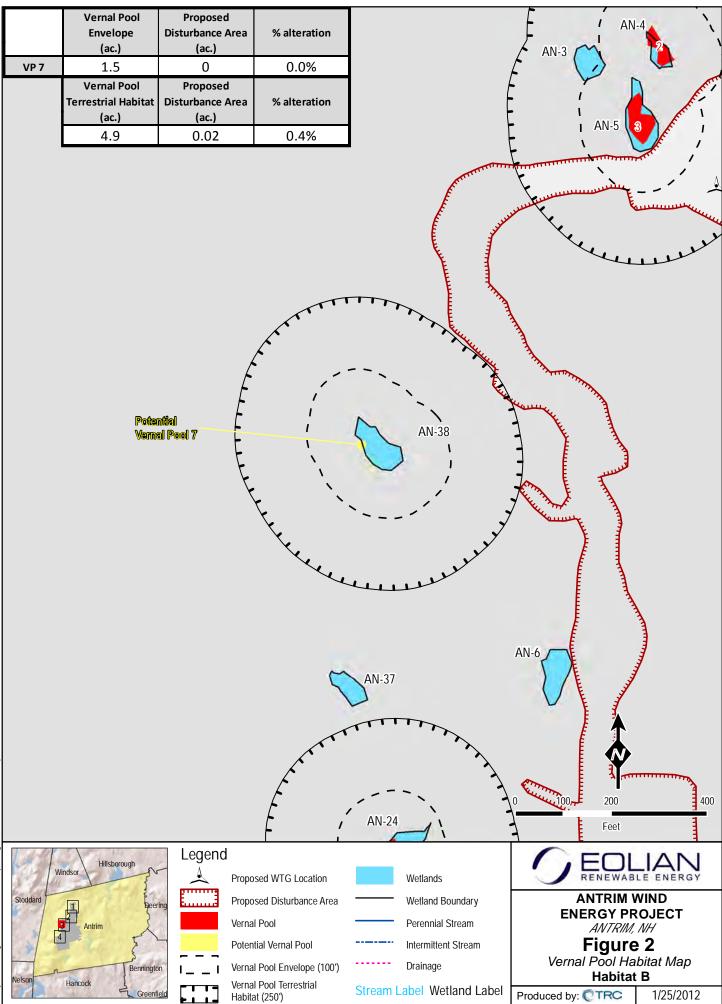
There are no state regulations in New Hampshire, other than wetland protection rules, to regulate development within and adjacent to vernal pools. The Army Corps does regulate impacts to vernal pools as a type of special wetland through Section 404 of the Clean Water Act. The Army Corps Programmatic General Permit No: NAE-2007-461 (PGP) for the State of New Hampshire states that applicants must minimize surrounding upland impacts to the greatest extent practicable, with the effort to minimize impacts being commensurate with the value of the VP. The Army Corps PGP also recommends that impacts should be excluded from the vernal pool envelope and that certain guidelines for vernal pool management are followed, which suggest that the developed area (such as gravel surfaces) is kept to less than 25% of the terrestrial habitat area (Calhoun and Klemens 2002).

A gravel road and turbine pad is found within vernal pool Habitat A and a small portion of road is found within Habitat B. Analysis demonstrates that the impact to Habitat A terrestrial habitat is 2.3 acres of the 10 acre terrestrial habitat area, or 22.9% of the total terrestrial habitat area. Vernal pool 1 envelope impact is .01 acre of a 1.2 acre envelope area, or 1.1% of the envelope. Vernal pools 2 and 3 envelope impact is 0.46 acres to a 2.1 acre envelope area, or 22.2% of the envelope. Impact to Habitat B is approximately 0.02 acres of the 4.9 acre terrestrial habitat area, or 0.4% of the total terrestrial habitat area. There is no impact to Habitat B (VP7) vernal pool envelope. There is no impact to the terrestrial habitat or envelope of Habitat C.

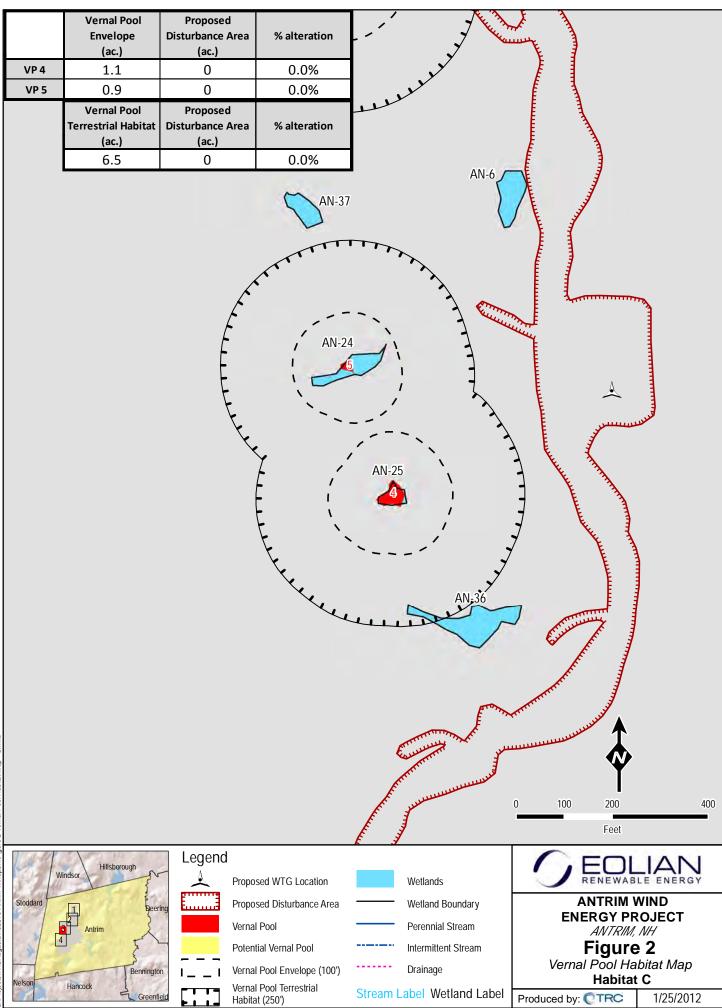
The level of impact to the terrestrial habitat areas is below the recommended 25% developed area threshold. There is, however some impact to the vernal pool envelope area. These impacts are mitigated by the gravel road not being open to public vehicle traffic and as such will have a very limited volume of traffic and a very low potential to impact any vernal pool species crossing the road. Narrow gravel roads are also not significant barriers to amphibians, and will not hinder movement of the animals through the area. It is anticipated that the proposed development of this area will have no impact on the productivity of these vernal pools.



ojects\TRCAugusta\182878-Antrim Windpark\Figure 2 Vernal Pool Habita



ojects\TRCAugusta\182878-Antrim Windpark\Figure 2 Vernal Pool Habitat Map - B.r.



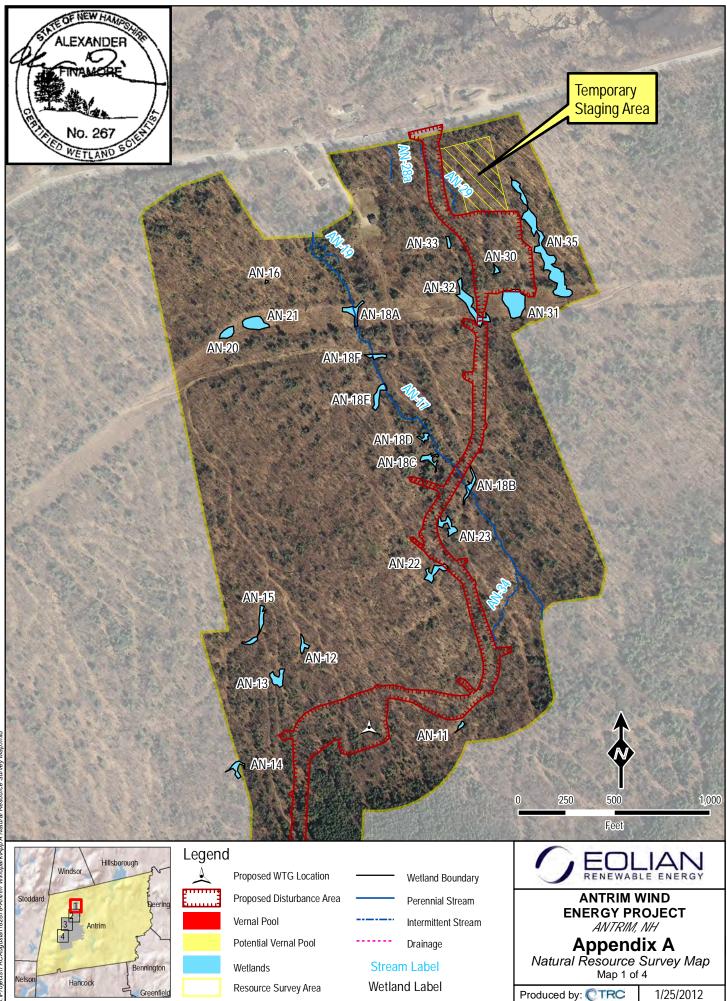
Projects\TRCAugusta\182878-Antrim Windpark\Figure 2 Vernal Pool Habitat Map - C.n

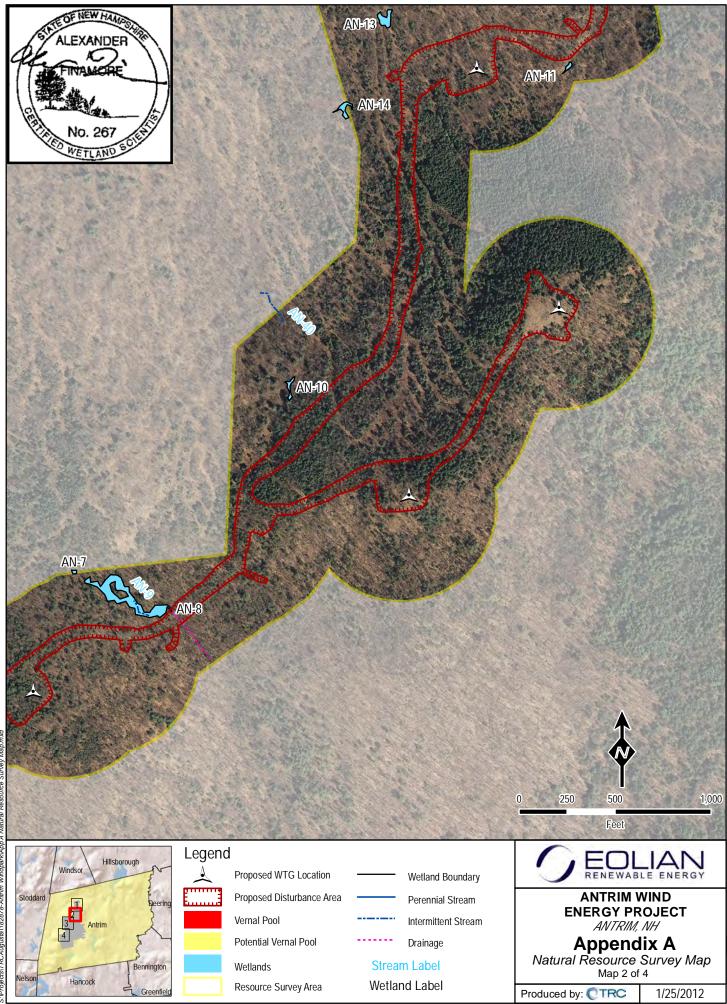
5.0 **REFERENCES**

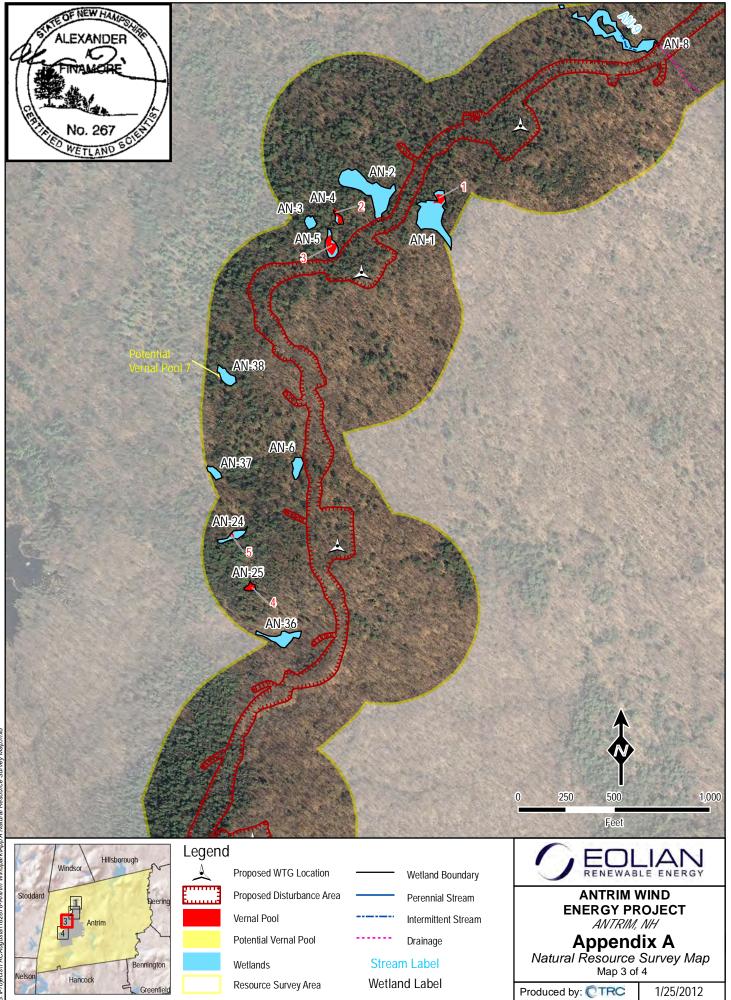
- Calhoun, A. J. K. and P. deMaynadier. 2004. Forestry habitat management guidelines for vernal pool wildlife. MCA Technical Paper No. 6, Metropolitan Conservation Alliance, Wildlife Conservation Society, Bronx, New York.
- Calhoun, A. J. K. and M. W. Klemens. 2002. Best development practice: Conserving poolbreeding amphibians in residential and commercial developments in the northeastern United States. MCA Technical Paper No. 5, Metropolitan Conservation Alliance, Wildlife Conservations Society, Bronx, New York.
- Identification and Documentation of Vernal Pools in New Hamphire. Anne Tappan, Ed. NH Fish & Game Department, Nongame and Endangered Wildlife Program. 1997.
- Maine Amphibians and Reptiles. Malcolm J. Hunter, Aram J.K. Calhoun, & Mark McCollough, Ed. University of Maine Press. 1999.

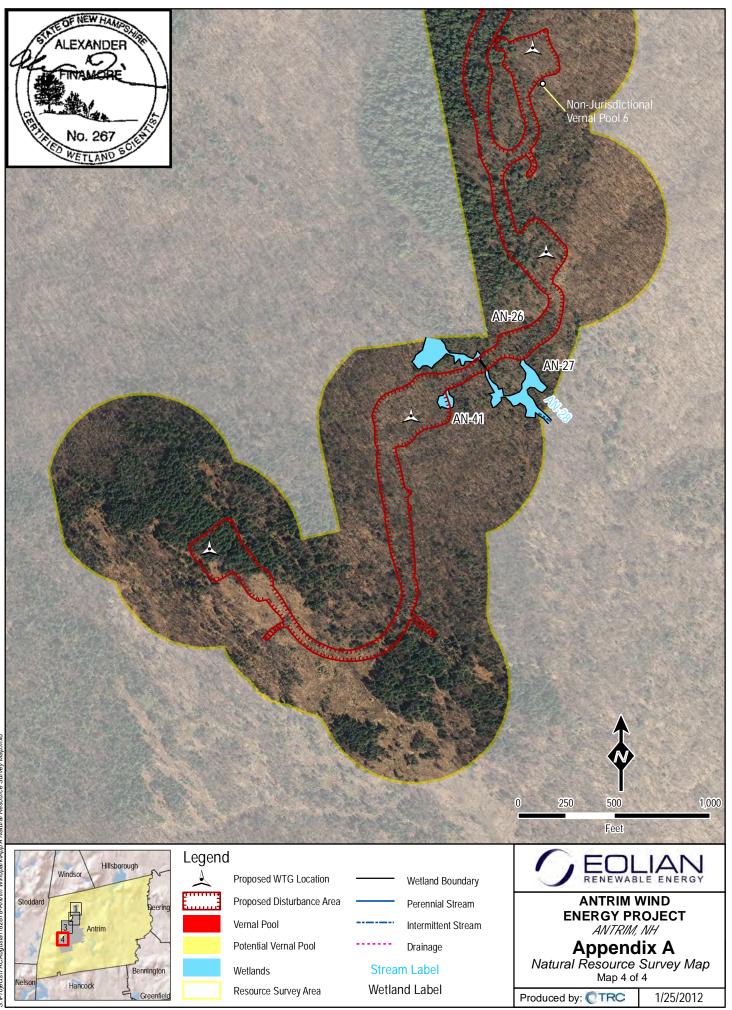
APPENDIX A

Natural Resource Survey Map









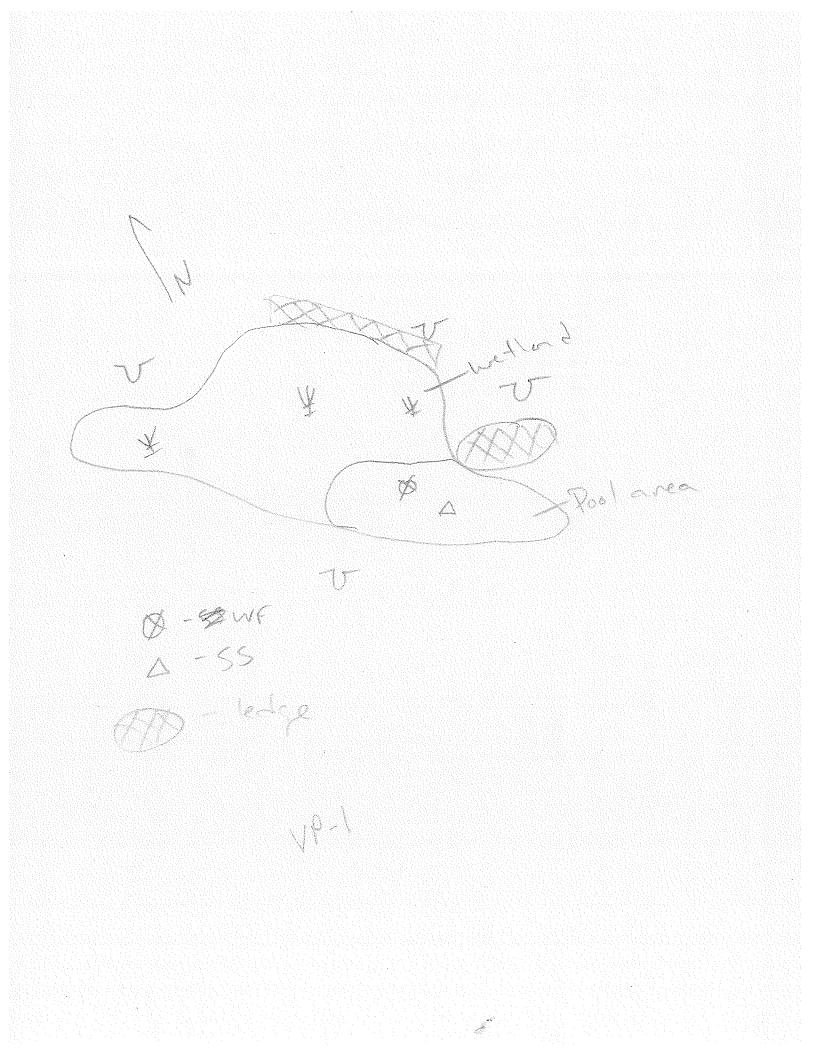
3:Projects\TRCAugusta\182878-Antrim Windpark\App A Natural Resource

APPENDIX B

Vernal Pool Field Data Forms & Vernal Pool Site Photographs

				TION (PAR			VP-
Observer's name	in Boldus	é Mex f	`} NAAN SS€	Phone numbe	(207)8	79-1930	Ext 143
Address 400 S	Barthkoron	ch Derv	e Sonth	Portland	ME		
Location of pool	He Hill A	wtrim,	NH				
GPS (if available):	Latitude	903.4 <u>54</u>	Longit	ude <u>W072°0</u>	<u>1.08</u> 2	Datum	
Photos attached		pool		an	imals		
	g						
Date:5/2//	1/		Time star	1. 2:10		Time end	:45
Weather <u>OWNCHS</u> Pud =	+ 60°4		Pool size	20XSO red Brestimat	ed	Water depto	-8
SPECIES	Stated Sala	wood from	George biog				
adult		1					
vocalization			1				
amplexus							
courtship							
spermatophores							
eggs	Chasses	Smasses					
tadpoles/larvae		<u> </u>					
juveniles							
Comments:		1		11			
• • • • • • • • • • • •			6456905	9 8 8 8 8 8 8 8	800309	* * 6 0 * 5 4	
Date:				itart		Time end	
Weather		1	Pool si	ze		Water depth	1
SPECIES							
adult							
vocalization							
amplexus							
courtship							
spermatophores							
eggs							
tadpoles/larvae							
juveniles							
Comments:		1	1				<u></u>

Use the back of the sheet for sketch/field map of the pool.



1P-1 **VERNAL POOL HABITAT DOCUMENTATION (Part 2 of 2)** Pool Location Tutle Hill, AntRim, NH Observer JB + AF SITE/ TYPE: upland-isolated (pool not associated with a wetland) bottomland-isolated (pool in a floodplain, not in a wetland) wetland complex (pool within or associated with a larger wetland habitat, i.e. red maple swamp, marsh, pond edge, other) HABITAT: (estimate % of type) 50% woodland (specify type) √ mixed deciduous coniferous agriculture or open fields gravel pit residential roadside other **OVERSTORY:** heavy overstory, >50% shrubs and/or trees moderate overstory, <50% shrubs and/or trees open site with grasses, forbs, scattered shrubs COVER: Any material in the pool that can provide egg attachment sites and offer concealment to aquatic adults and/or developing arvae (estimate % of type). 20% shrubs _ emergent vegetation (i.e. grass, cattails) branches, twigs (in pool or overhanging into water) submergent vegetation 90% sphagnum moss other BOTTOM: (estimate % of types composing bottom surface) _____sand mud/soft sediment V leaf litter 90% _____ submergent vegetation emergent vegetation DOMINANT PLANTS, LIST: (optional) Ace rub, vac cor, Black spruce Sphagnum I car Sp., OSM cin P.I + mound surrounded by mossy wetland WE eggs mature COMMENTS: Attach location documentation. Photo I - South Photo 4- Wood Frog Photo Z- West Photo 3- Spotted 47

VP-1

Inclu	Ide with documentation for each vernal pool.
~	flooded pool visit photos included
	dry, drying pool visit photos included
\leq	field map of pool
	written directions to pool
	USGS map, photo copy
	ONE of the following, indicating pool location:
	tax assessors map detailed location information
	Evidence of vernal pool indicator species (check all present): fairy shrimp wood frog
Report	er's name Jim Bolduc & Alex Finamore
Addres	ss 400 Southborough Drive h PortLoud, ME 04106
<u>Jou1</u>	number (207) 879-1930 Ext 143
Phone	number $(201) - 3 (7 - 1750 - 8 \times 177)$



VP1



VP1 wood frog eggs



VP1 spotted salamander eggs





VP1 second visit June 2011



VP1 second visit June 2011

Observer's name	$\overline{\beta + A}$	£		Phone nu	Imber		
Address							
Location of pool		医结核病 化合理合物 化合合合物 化合合合物 网络拉拉拉		states and the second second second second			
GPS (if available):	Latitude <u>4</u>	303.43	C Longi	tude <u>72</u>	01.20	Datum	AD 23
Photos attached	2	pool			_animals		
و و و و و و و و و و و						승규 김 나는 아님, 바람은 감독 것을 다 들었는	
Date: <u>5-5-2</u> Weather <u>Scaller</u>	<u>2611</u>		Time sta	r <u>11.50</u>	>	Time end	~ 11
Weather <u>>callars</u>	2 shav	very	Pool size	ured ⊊lest	to imated	Water depth	<u>9''</u>
SPECIES	WR	55					
adult							
vocalization		÷,					
amplexus							
courtship							
spermatophores							
eggs	1	16					
tadpoles/larvae							
juveniles							
Comments:	1	11					
					-		
				8 9 9 9 8			
)ate:			Time :	start		Time end	
Veather			Pool s	ize		Water depth	
SPECIES	이 가슴을 만들어 들었다. 나라						
SPECIES				이 물건을 만든 것을 수 없을 수 없다.	and an a statistic		
							일을 물고 말했다. 승규가
adult							
adult vocalization							
adult vocalization amplexus							
adult vocalization amplexus courtship							
adult vocalization amplexus courtship spermatophores							

VP-2

Use the back of the sheet for sketch/field map of the pool.

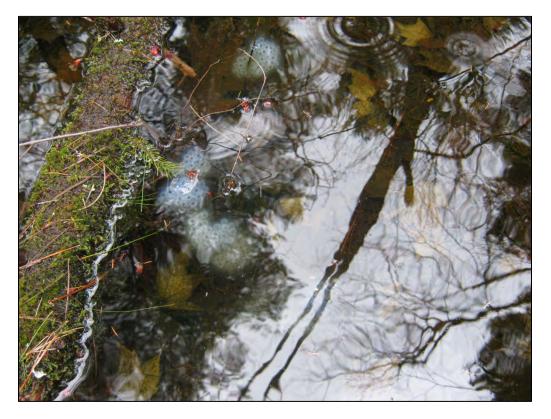
VP-2 Flage 1-10 Photos = 4 17 X -SS eggs (approx) C.I - WE Egg (Linner, 🕅 - Idee oversj y - yellard - v- spl-s 0 - Phut luchion

VP-2-**VERNAL POOL HABITAT DOCUMENTATION (Part 2 of 2)** Pool Location Tutte Hill, Antrim Observer TR+AF SITE/ TYPE: upland-isolated (pool not associated with a wetland) bottomland-isolated (pool in a floodplain, not in a wetland) wetland complex (pool within or associated with a larger wetland habitat, i.e. red maple swamp, marsh, pond edge, other) Trolated fed maple Swamp (very Small) HABITAT: (estimate % of type) ____ deciduous 100 woodland (specify type) mixed _____ coniferous ____agriculture or open fields gravel pit residential roadside other_ **OVERSTORY:** heavy overstory, >50% shrubs and/or trees moderate overstory, <50% shrubs and/or trees open site with grasses, forbs, scattered shrubs COVER: Any material in the pool that can provide egg attachment sites and offer concealment to aquatic adults and/or developing arvae (estimate % of type). 15 shrubs emergent vegetation (i.e. grass, cattails) 25 branches, twigs (in pool or overhanging into water) submergent vegetation Sphagnum moss other_____ BOTTOM: (estimate % of types composing bottom surface) sand mud/soft sediment 100 leaf litter submergent vegetation emergent vegetation DOMINANT PLANTS, LIST: (optional) Ace NS, Vac Cor, Sp: lat Toolated pool in pocket of ledge near Top of mat. COMMENTS: Attach location documentation.

	VP-2
'ERNAL PO	OL DOCUMENTATION COVER SHEET
Inclu	Ide with documentation for each vernal pool.
<u> </u>	flooded pool visit photos included
	dry, drying pool visit photos included
<u> </u>	field map of pool
	written directions to pool
	USGS map, photo copy
	ONE of the following, indicating pool location: tax assessors map
	detailed location information
	Evidence of vernal pool indicator species (check all present):
	salamande (spotted, Jefferson, blue-spotted) courtship spermatophores egg mass larvae
\leq	Photos of indicator species (4)
	Documentation forms and maps submitted to <u>both</u> : town conservation commission Nongame and Endangered Wildlife Program, NH Fish and Game Department, 11 Hazen Drive, Concord, NH 03301
Report	er's name Jim Bolduc + Alex Finamore
Addres	3S
Phone	number
	for participating in the vital process of protecting the resources of your and the state.



VP2 wood frog eggs



VP2 spotted salamander eggs



VP2





VP2 second visit June 2011

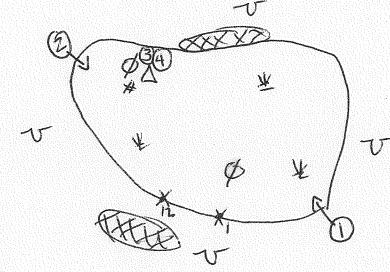
VP3

		10	OCUMENTATION			
Observer's name	<u>, 15 + 1</u>	<u>V</u>	Phon	e number		
Address	비. 니		Atrian			
Deation of pool	THE V	3 NZ 414	Antrin Longitude 72	10 61 202		10 07
Photos attached		<u> </u>	Longitude_ <u>12</u>	_ 01.000	Datum <u>M</u> ¥	<u>10 6 3</u>
		pool		animals		
Date: 5-5-	2011		Time start 12.	••••••••••••••••••••••••••••••••••••••	* • • • • • • • • •	•••••• • 46
Veather Eater	red Show	iers S!	Time start 12:	<u></u> \$`0	Time end_ <u>_</u> Water depth_	<u> </u>
				estimated		
SPECIES	WF	55	Red News			
adult			1			
vocalization						
amplexus						
courtship						
spermatophores						
eggs	5	9				
adpoles/larvae						
uveniles						
	1	<u> </u>				
mments:						

•••••••••••• B:			Time start		Time end	
			Time start Pool size		Time end Water depth_	
ather						
ather						
atherSPECIES						
atherSPECIES dult ocalization						
SPECIES dult ocalization nplexus						
atherSPECIES duit cocalization nplexus courtship						
SPECIES dult cocalization mplexus courtship coermatophores						
satherSPECIES adult rocalization implexus ourtship permatophores ggs						

Use the back of the sheet for sketch/field map of the pool.

VP-3 lags 1-12



Ø = 55 △ = WF # - Red Newt = ledge outerop P Photo location (+ disection) JP?S

VERNAL POOL HABITAT DOCUMENTATION (Part 2 of 2) Tuttle Hill - Antrim Observer JB + AF Pool Location SITE/ TYPE: _____ upland-isolated (pool not associated with a wetland) bottomland-isolated (pool in a floodplain, not in a wetland) wetland complex (pool within or associated with a larger wetland habitat, i.e. red maple swamp, marsh, pond edge, other) intered + Small HABITAT: (estimate % of type) /<u>oo</u> woodland (specify type) mixed ____ deciduous coniferous agriculture or open fields gravel pit residential roadside other **OVERSTORY:** heavy overstory, >50% shrubs and/or trees moderate overstory, <50% shrubs and/or trees open site with grasses, forbs, scattered shrubs COVER: Any material in the pool that can provide egg attachment sites and offer concealment to aquatic adults and/or developing arvae (estimate % of type). /S shrubs 50 emergent vegetation (i.e. grass, cattails) branches, twigs (in pool or overhanging into water) submergent vegetation 20 sphagnum moss other BOTTOM: (estimate % of types composing bottom surface) _____sand mud/soft sediment leaf litter submergent vegetation emergent vegetation DOMINANT PLANTS, LIST: (optional) COMMENTS: J Isolated Pool in ledge poced near somet (Torbin 4) Attach location documentation (Ace mb, Sci cyp, Sphagnon, Spi lat, Car Sp.) Vac Cor

	Include with documentation for each vernal pool.
	flooded pool visit photos included
	dry, drying pool visit
	photos included
	field map of pool
	written directions to pool
	USGS map, photo copy
	ONE of the following, indicating pool location:
	tax assessors map
	detailed location information
	Evidence of vernal pool indicator species (check all present):
	fairy shrimp
	wood frog chorus
	amplexus
	egg mass
	tadpoles
	salamander(spotted, Jefferson, blue-spotted) courtship
	spermatophores
	egg mass
	larvae
_	Photos of indicator species
	Documentation forms and maps submitted to both:
-	town conservation commission
	Nongame and Endangered Wildlife Program, NH Fish
	and Game Department, 11 Hazen Drive, Concord, NH 03301
F	reporter's name Jim Bolduc + Alex Finamone
\$	
β	ddress
ρ	hone number

VP-3



VP3 wood frog eggs



VP3 spotted salamander eggs



VP3





VP3 second visit June 2011

							VP-4
	VEDNAI				- 1 AE 31		Flags
 Dbserver's name		승규는 것을 걸릴 것을 들었다.		TION (PART			
	<u>1 16 / 17</u>			Phone numbe	r		
Address	Between	H	o Hill	+ wille	-d M	<u>~+ -</u>	Antrin
GPS (if available):				ude <u>72°01</u>		Datum <u>N</u> A	
Photos attached	Z		Longi	Jorg	mals	Datum <u>-707</u>	(ve_
Date: <u> ら</u> -ら			Time star	1. 8-115	0	Time end Z	.:15
Veather <u>Partlu</u>	1 Chidy	<u>55°</u>	Pool size	<u>Sox4o</u> ired Zestimate		Water depth	16"
SPECIES	WF	55					
adult							
vocalization							
amplexus							
courtship							
spermatophores							
eggs	4	55					
tadpoles/larvae							
juveniles							
omments:				<u>1</u>		1	4
9 8 8 8 8 8 8 8 8							
						Time end	
ate:			Time s	start			
	· · · · · · · · · · · ·		Time s Pool s			Water depth	
/eather							
Veather							
Veather							
VeatherSPECIES adult vocalization amplexus							
VeatherSPECIES adult vocalization amplexus							
Veather SPECIES adult vocalization amplexus courtship spermatophores							
adult vocalization amplexus courtship							

Use the back of the sheet for sketch/field map of the pool.

vp-4 1-10 lags v trail D ۵ U D ¥ ¥=55 à = WF - wither v- upland Phato lication (w/ direction) 18.4

Pool Location Betree	en Tothe Hun + w. Mand mil Observer JB + AF
SITE/ TYPE:	
	_ upland-isolated (pool not associated with a wetland)
	 bottomland-isolated (pool in a floodplain, not in a wetland) wetland complex (pool within or associated with a larger wetland
	habitat, i.e. red maple swamp, marsh, pond edge, other) Hendock som
HABITAT: (estimate % o	of type)
<u>/00</u>	woodland (specify type) deciduous coniferous mixed
	_ gravel pit
	_ residential roadside
OVERSTORY:	
\underline{v}	heavy overstory, >50% shrubs and/or trees (planlock)
	_ moderate overstory, <50% shrubs and/or trees open site with grasses, forbs, scattered shrubs
	_ moderate overstory, <50% shrubs and/or trees
	moderate overstory, <50% shrubs and/or trees open site with grasses, forbs, scattered shrubs in the pool that can provide egg attachment sites and offer concealment to aquatic adults and/or
developing arv	 moderate overstory, <50% shrubs and/or trees open site with grasses, forbs, scattered shrubs in the pool that can provide egg attachment sites and offer concealment to aquatic adults and/or vae (estimate % of type). shrubs
developing arv	 moderate overstory, <50% shrubs and/or trees open site with grasses, forbs, scattered shrubs in the pool that can provide egg attachment sites and offer concealment to aquatic adults and/or vae (estimate % of type). shrubs emergent vegetation (i.e. grass, cattails)
developing arv	 moderate overstory, <50% shrubs and/or trees open site with grasses, forbs, scattered shrubs in the pool that can provide egg attachment sites and offer concealment to aquatic adults and/or vae (estimate % of type). shrubs
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	V4-4
/ERN/	L POOL DOCUMENTATION COVER SHEET
	Include with documentation for each vernal pool.
	flooded pool visit photos included (y, 4)
	dry, drying pool visit photos included
	field map of pool
	written directions to pool
	USGS map, photo copy
	ONE of the following, indicating pool location:
	tax assessors map detailed location information
	 wood frog chorus amplexus egg mass tadpoles salamander (spotted, Jefferson, blue-spotted) courtship spermatophores egg mass larvae
	Photos of indicator species
	Documentation forms and maps submitted to both:
	Reporter's name Im Bolduc + Alex Finaman
	Address
-	Phone number
	nk you for participating in the vital process of protecting the resources of your munity and the state.



VP4 spotted salamander eggs



VP4 spotted salamander eggs



VP4

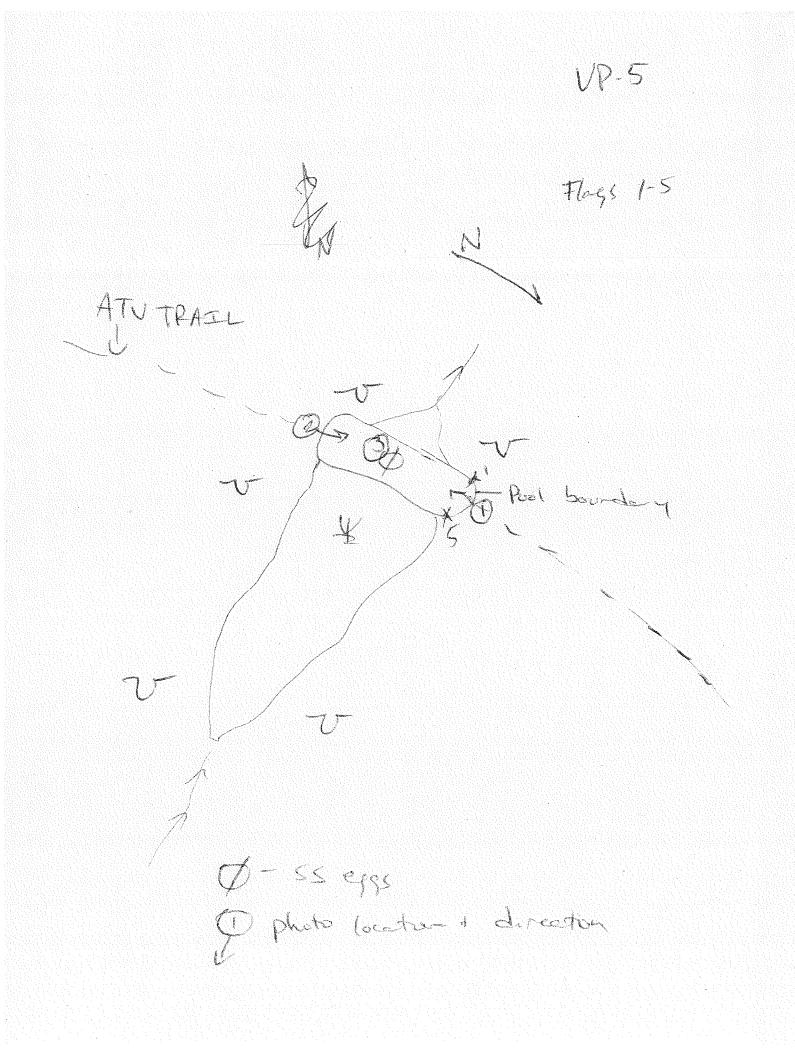




VP4 second visit June 2011

							VP-
Observer's name	9	~	CUMENTA)	V P- 5- (
Address							
_ocation of pool	pues	Tutt	e Hih	L W	iller	Mont	
GPS (if available):	Latitude 43	<u>03 169</u>	Longit	ude <u>77°(</u>	PIEIC	Munt Datum_N	40 83
Photos attached					animals		
Date: <u>5-</u> 9-			Time star	 1 <u>9:00</u>	• • • • • • •	Time end	 7:25
Weather <u>Sn</u>	MY~G	<u>õ</u>	Pool size	15×2	<u>5</u>	Water depth_	<u>'6'</u>
	1			red Øestim	ated		
SPECIES	55						
adult							
vocalization							
amplexus							
courtship							
spermatophores							
eggs	10						
tadpoles/larvae							
juveniles							
Comments:			••••••	••••••		••••••	• • • • • • • •
Weather			Pool s	ize	<u></u>	Water depth_	
SPECIES							
adult							
vocalization							
amplexus							
courtship							
spermatophores							
eggs							
말 같은 것 같은		1					
tadpoles/larvae							영 말 같은 것 같 것 같 것

Use the back of the sheet for sketch/field map of the pool.



				VP-S	
	VERN/	AL POOL HABIT	AT DOCUMENTATIO	ON (Part 2 of 2)	
Pool Location_	Between	- Tottle 1011	+ U.I. Observe	"JB+AF	
SITE/ TYPE:					
			ociated with a wetland)		
			floodplain, not in a wetlan		
			or associated with a larger , marsh, pond edge, other)		
	nabidi	See4	, marsh, pona cago, otner)		
		\sim			
HABITAT: (estin					
			deciduous	coniferous	🤟 mixed
	agricul gravel	lture or open fields			
	graver				
	roadsid				
	other_				
OVERSTORY:					
		overstory, >50% shrub			
		ate overstory, <50% sh			
	open s	ite with grasses, forbs,	scattered shrubs		
	oping arvae (estim shrubs emerge branch subme	nate % of type).	ss, cattails)	offer concealment to aqua	atic adults and/or
	oping arvae (estim shrubs emerge branch subme	nate % of type). ent vegetation (i.e. gras es, twigs (in pool or ov rgent vegetation	ss, cattails)	offer concealment to aqua	tic adults and/or
	pping arvae (estim shrubs emerge branch submer sphagn	nate % of type). ent vegetation (i.e. gras es, twigs (in pool or ov rgent vegetation	ss, cattails)	offer concealment to aqua	itic adults and/or
develo	pping arvae (estim shrubs emerge /branch submer sphagr other hate % of types co	nate % of type). ent vegetation (i.e. gras es, twigs (in pool or ov rgent vegetation	ss, cattails) erhanging into water)	offer concealment to aqua	atic adults and/or
develo	pping arvae (estim shrubs emerge ////branch submer sphagr other hate % of types co sand	nate % of type). ent vegetation (i.e. gras es, twigs (in pool or ov rgent vegetation hum moss	ss, cattails) erhanging into water)	offer concealment to aqua	atic adults and/or
develo	pping arvae (estim shrubs emerge ////branch submer sphagr other hate % of types co sand sand	nate % of type). ent vegetation (i.e. gras les, twigs (in pool or ov rgent vegetation hum moss pomposing bottom surfact oft sediment	ss, cattails) erhanging into water)	offer concealment to aqua	tic adults and/or
develo	pping arvae (estim shrubs branch sphagn other hate % of types co sand sand sand leaf litte	nate % of type). ent vegetation (i.e. gras les, twigs (in pool or ov rgent vegetation num moss omposing bottom surfact off sediment er	ss, cattails) erhanging into water)	offer concealment to aqua	atic adults and/or
develo	pping arvae (estim 	nate % of type). ent vegetation (i.e. gras les, twigs (in pool or ov rgent vegetation hum moss pomposing bottom surfact oft sediment	ss, cattails) erhanging into water)	offer concealment to aqua	atic adults and/or
develo	pping arvae (estim 	nate % of type). ent vegetation (i.e. gras les, twigs (in pool or ov rgent vegetation num moss omposing bottom surfact off sediment er rgent vegetation	ss, cattails) erhanging into water)	offer concealment to aqua	tic adults and/or
develo	pping arvae (estim 	nate % of type). ent vegetation (i.e. gras les, twigs (in pool or ov rgent vegetation num moss omposing bottom surfact off sediment er rgent vegetation ent vegetation	ss, cattails) erhanging into water)	offer concealment to aqua	tic adults and/or
develo	pping arvae (estim 	nate % of type). ent vegetation (i.e. gras les, twigs (in pool or ov rgent vegetation num moss omposing bottom surfact off sediment er rgent vegetation ent vegetation	ss, cattails) erhanging into water)	offer concealment to aqua	atic adults and/or
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develo BOTTOM: (estin DOMINANT PLA	pping arvae (estim 	nate % of type). ent vegetation (i.e. gras les, twigs (in pool or ov rgent vegetation hum moss composing bottom surfact off sediment er rgent vegetation ent vegetation	ss, cattails) erhanging into water) 		

h gazz ^y	
VERN	IAL POOL DOCUMENTATION COVER SHEET
	Include with documentation for each vernal pool.
	flooded pool visit
	dry, drying pool visit photos included
	field map of pool
	written directions to pool
	USGS map, photo copy
	ONE of the following, indicating pool location:
	tax assessors map detailed location information
	Evidence of vernal pool indicator species (check all present): fairy shrimp wood frog chorus amplexus egg mass tadpoles salamander (spotted, Jefferson, blue-spotted) courtship spermatophores
	<u>/c</u> egg mass larvae
	Photos of indicator species
	Documentation forms and maps submitted to both: town conservation commission Nongame and Endangered Wildlife Program, NH Fish and Game Department, 11 Hazen Drive, Concord, NH 03301
	Reporter's name Jim Bolduc + Alex forcement
	Address
	Phone number

48



VP5 spotted salamander eggs





VP5



VP5 second visit June 2011

						VY	-6	
						a.	-6 95 1	- Î
		LPOOL	DOCUMENT	ATION (PA	RT 1 OF 2)	(-1) = (0
Dbserver's name 5	B+ A	F		Phone nu	mber			
ddress								
ocation of pool	siller	M,	nt					_
PS (if available):	Latitude 4	A REAL PROPERTY AND A REAL PROPERTY.	<i>]_∂</i> Long	gitude <u>72°</u>	61.279	Datum	AD83	
hotos attached	_2	pool			_animals			
	a o e e e e	505069	6 0 0 6 8 8 8 8		* # # # # # # #			· v
ate: <u>5</u>		1 10		art <u>(0:15</u>		Time end <u>(-</u>	<u>25</u>	-
'eather <u>Sow</u>	ny ~	65°	Pool siz	re <u>(0 ∧ 7</u> sured ⊠a esti	<u>20</u> mated	Water depth_		-
SPECIES	4			-]
adult								
vocalization								
amplexus								
courtship								
spermatophores								
eggs	9							
tadpoles/larvae								
juveniles	<u> </u>	eld	relic	fen	<u> </u>			_
juveniles	<u></u>	<u>ald</u>	relic	fem	<u> </u>			
juveniles	<u></u>	<u>eld</u>			2560526	Time end	• • • • • • • •	- -
juveniles	<u></u>	<u>ald</u>	••••••		2560526		• • • • • • • •	-
juveniles	<u></u>	<u>ald</u>	••••••	• start	2560526			- -
juveniles pmments: ate: eather SPECIES	<u></u>	<u>ald</u>	••••••	• start	2560526			-
juveniles pmments: ate: eather SPECIES adult		21d	••••••	• start	2560526			-
juveniles pmments: te: eather SPECIES adult vocalization		21d	••••••	• start	2560526			
juveniles pmments: ate: eather SPECIES adult vocalization amplexus		<u>- 21d</u>	••••••	• start	2560526			-
juveniles pmments: ate: eather SPECIES adult vocalization amplexus courtship			••••••	• start	2560526			
juveniles mments: ate: eather SPECIES adult vocalization amplexus courtship spermatophores	·····		••••••	• start	2560526			
juveniles omments: ate: reather species adult vocalization amplexus courtship spermatophores eggs			••••••	• start	2560526			
juveniles omments: ate:			••••••	• start	2560526			

Use the back of the sheet for sketch/field map of the pool.

JP-6 1-5 Flays N q=sseque Q=ne old form road

	IA I TO W
Pool Location W()	by mut Observer TRAAF
SITE/ TYPE:	
	upland-isolated (pool not associated with a wetland)
	bottomland-isolated (pool in a floodplain, not in a wetland)
<u>~</u>	wetland complex (pool within or associated with a larger wetland
	habitat, i.e. red maple swamp, marsh, pond edge, other) Isolantee which gld form rd
HABITAT: (estimate % o	f type)
<u>[</u> 60]	woodland (specify type) deciduous coniferous mixed
	agriculture or open fields
	gravel pit residential
	roadside
	other
OVERSTORY:	
<u>レ</u>	heavy overstory, >50% shrubs and/or trees
	moderate overstory, <50% shrubs and/or trees
	open site with grasses, forbs, scattered shrubs
	open site with grasses, forbs, scattered shrubs in the pool that can provide egg attachment sites and offer concealment to aquatic adults and/o
	open site with grasses, forbs, scattered shrubs in the pool that can provide egg attachment sites and offer concealment to aquatic adults and/o rae (estimate % of type).
	open site with grasses, forbs, scattered shrubs in the pool that can provide egg attachment sites and offer concealment to aquatic adults and/o rae (estimate % of type). shrubs
developing arv 	open site with grasses, forbs, scattered shrubs in the pool that can provide egg attachment sites and offer concealment to aquatic adults and/o rae (estimate % of type). shrubs emergent vegetation (i.e. grass, cattails)
developing arv 	open site with grasses, forbs, scattered shrubs in the pool that can provide egg attachment sites and offer concealment to aquatic adults and/o rae (estimate % of type). shrubs emergent vegetation (i.e. grass, cattails) branches, twigs (in pool or overhanging into water)
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developing arv	open site with grasses, forbs, scattered shrubs in the pool that can provide egg attachment sites and offer concealment to aquatic adults and/o vae (estimate % of type). shrubs emergent vegetation (i.e. grass, cattails) branches, twigs (in pool or overhanging into water) submergent vegetation sphagnum moss
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developing arv	open site with grasses, forbs, scattered shrubs in the pool that can provide egg attachment sites and offer concealment to aquatic adults and/o rae (estimate % of type). shrubs emergent vegetation (i.e. grass, cattails) branches, twigs (in pool or overhanging into water) submergent vegetation sphagnum moss other
developing arv	open site with grasses, forbs, scattered shrubs in the pool that can provide egg attachment sites and offer concealment to aquatic adults and/o rae (estimate % of type). shrubs emergent vegetation (i.e. grass, cattails) branches, twigs (in pool or overhanging into water) submergent vegetation sphagnum moss other f types composing bottom surface) sand mud/soft sediment
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developing arv	open site with grasses, forbs, scattered shrubs in the pool that can provide egg attachment sites and offer concealment to aquatic adults and/o rae (estimate % of type). shrubs emergent vegetation (i.e. grass, cattails) branches, twigs (in pool or overhanging into water) submergent vegetation sphagnum moss other
developing arv <u>/C</u> BOTTOM: (estimate % or <u>/C 7</u>	open site with grasses, forbs, scattered shrubs in the pool that can provide egg attachment sites and offer concealment to aquatic adults and/o rae (estimate % of type). shrubs emergent vegetation (i.e. grass, cattails) branches, twigs (in pool or overhanging into water) submergent vegetation sphagnum moss other
developing arv <u>/C</u> BOTTOM: (estimate % or <u>/C 7</u>	open site with grasses, forbs, scattered shrubs in the pool that can provide egg attachment sites and offer concealment to aquatic adults and/o rae (estimate % of type). shrubs emergent vegetation (i.e. grass, cattails) branches, twigs (in pool or overhanging into water) submergent vegetation sphagnum moss other
developing arv <u>/C</u> BOTTOM: (estimate % or <u>/C 7</u>	open site with grasses, forbs, scattered shrubs in the pool that can provide egg attachment sites and offer concealment to aquatic adults and/o rae (estimate % of type). shrubs emergent vegetation (i.e. grass, cattails) branches, twigs (in pool or overhanging into water) submergent vegetation sphagnum moss other

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VP-6

Inclu	Ide with documentation for each vernal pool.
レ	flooded pool visit
	photos included
	dry, drying pool visit
	photos included
	field map of pool
	written directions to pool
	USGS map, photo copy
	ONE of the following, indicating pool location:
	tax assessors map
	detailed location information
	Evidence of vernal pool indicator species (check all present):
	fairy shrimp wood frog
	wood hog chorus
	amplexus
	egg mass
	tadpoles
	salamander (spotted, Jefferson, blue-spotted)
	courtship
	spermatophores
	egg mass
	larvae
<u> </u>	Photos of indicator species
	Documentation forms and maps submitted to both:
	town conservation commission
	Nongame and Endangered Wildlife Program, NH Fish and Game Department, 11 Hazen Drive, Concord, NH 0330
Renort	er's name
Addres	SS
rnone	number

48



VP6



VP6 spotted salamander eggs



VP7



EXHIBIT 7

USACE NH PROGRAMMATIC PERMIT APPENDIX B

U.S. Army Corps of Engineers New Hampshire Programmatic General Permit (PGP) Appendix B - Corps Secondary Impacts Checklist (for inland wetland/waterway fill projects in New Hampshire)

Attach any explanations to this checklist. Lack of information could delay a Corps permit determination.
 All references to "work" include all work associated with the project construction and operation. Work

includes filling, clearing, flooding, draining, excavation, dozing, stumping, etc.

3. See PGP, GC 5 regarding single and complete projects.

4. Contact the Corps at (978) 318-8832 with any questions.

4. Contact the Corps at (978) 518-8852 with any questions.		
1. <u>Impaired Waters</u>	Yes	No
1.1 Will any work occur within 1 mile upstream in the watershed of an impaired water? See		
http://des.nh.gov/organization/divisions/water/wmb/section401/impaired_waters.htm		Х
to determine if there is an impaired water in the vicinity of your work area.*		
2. Wetlands	Yes	No
2.1 Are there are streams, brooks, rivers, ponds, or lakes within 200 feet of any proposed work?	X	
2.2 Are there proposed impacts to SAS, shellfish beds, special wetlands and vernal pools (see		
PGP, GC 26 and Appendix A)? Applicants may obtain information from the NH Department of		
Resources and Economic Development Natural Heritage Bureau (NHB) website,		Х
www.nhnaturalheritage.org, specifically the book Natural Community Systems of New		
Hampshire.		
2.3 If wetland crossings are proposed, are they adequately designed to maintain hydrology,	x	
sediment transport & wildlife passage?		
2.4 Would the project remove part or all of a riparian buffer? (Riparian buffers are lands adjacent		
to streams where vegetation is strongly influenced by the presence of water. They are often thin	x	
lines of vegetation containing native grasses, flowers, shrubs and/or trees that line the stream		
banks. They are also called vegetated buffer zones.)		
2.5 The overall project site is more than 40 acres.	X	-
2.6 What is the size of the existing impervious surface area?	0 sq.	
2.7 What is the size of the proposed impervious surface area?	500,94	_
2.8 What is the % of the impervious area (new and existing) to the overall project site?		16%
3. Wildlife	Yes	No
3.1 Has the NHB determined that there are known occurrences of rare species, exemplary natural		
communities, Federal and State threatened and endangered species and habitat, in the vicinity of		Х
the proposed project? (All projects require a NHB determination.)		
3.2 Would work occur in any area identified as either "Highest Ranked Habitat in N.H." or		
"Highest Ranked Habitat in Ecological Region"? (These areas are colored magenta and green,		
respectively, on NH Fish and Game's map, "2010 Highest Ranked Wildlife Habitat by Ecological		
Condition.") Map information can be found at:	X	
• PDF: www.wildlife.state.nh.us/Wildlife/Wildlife Plan/highest ranking habitat.htm.		
• Data Mapper: <u>www.granit.unh.edu</u> .		
 Data Mapper: <u>www.granit.unh.edu</u>. GIS: <u>www.granit.unh.edu/data/downloadfreedata/category/databycategory.html.</u> 3.3 Would the project impact more than 20 acres of an undeveloped land block (upland, 	X	
 Data Mapper: <u>www.granit.unh.edu</u>. GIS: <u>www.granit.unh.edu/data/downloadfreedata/category/databycategory.html.</u> 3.3 Would the project impact more than 20 acres of an undeveloped land block (upland, wetland/waterway) on the entire project site and/or on an adjoining property(s)? 	x	
 Data Mapper: <u>www.granit.unh.edu</u>. GIS: <u>www.granit.unh.edu/data/downloadfreedata/category/databycategory.html.</u> 3.3 Would the project impact more than 20 acres of an undeveloped land block (upland, 	X	X

4. Flooding/Floodplain Values	Yes	No
4.1 Is the proposed project within the 100-year floodplain of an adjacent river or stream?		Х
4.2 If 4.1 is yes, will compensatory flood storage be provided if the project results in a loss of flood storage?		
5. Historic/Archaeological Resources		
If a minor or major impact project, has a copy of the Request for Project Review (RPR) Form (<u>www.nh.gov/nhdhr/review</u>) been sent to the NH Division of Historical Resources as required on Page 5 of the PGP?	x	

*Although this checklist utilizes state information, its submittal to the Corps is a Federal requirement.

EXHIBIT 8

CONSTRUCTION SEQUENCE

ctivity ID	Activity Name	Orig.	Float	%	Start	Finish	_	2013							
		Dur.					/ Jui	n Jul	Aug Sep	Oct No	v Dec	Jan	eb Ma	r Apr	May
Eolian-Antrim Wind Power Project- C	Construction Schedule	340	0		01-Feb-13 A	30-Sep-14						1	1	1	-
Preconstruction Phase		150	190		01-Feb-13 A	07-Jan-14	:					▼			
MOB-00-03	Full Contract Execution	0	340	0%	12-Jun-13		•	Full Cor	ntract Execut	ion					
RFP & Preconstruction		0	340		12-Jun-13	12-Jun-13	•								
Owner Design & Engineering		0			01-Feb-13 A	01-Feb-13 A									
Procurement		150	190		12-Jun-13	07-Jan-14						▼			
Civil Materials		0	340		12-Jun-13	12-Jun-13									
Switchyard Materials		150	170		12-Jun-13	07-Jan-14	-					▼			
Collector Substation Materials		150	190		12-Jun-13	07-Jan-14						•			
Collector System		110	216		12-Jun-13	12-Nov-13			- <u></u>						
WTG Foundations		60	280		12-Jun-13	03-Sep-13	ΗT						1		
Construction Phase		322	18		12-Jun-13	04-Sep-14						-	1	-	
MOB-00-02	Full Notice to Proceed	0	94	0%	12-Jun-13			Full Not	tice to Proce	ed					
Mobilize		18	94		14-Jun-13	09-Jul-13									
CRP-01-22	Clear & Construct Laydown Area	5	95			20-Jun-13		i		Laydown Are	ea				
MOB-01-00	Mobilize Site	15	94	0%	19-Jun-13	09-Jul-13			lobilize Site				-		
Winter Shutdown		95	0		17-Dec-13	28-Apr-14							1		
CRP-01-12	Earthwork Shutdown	95	0	0%	17-Dec-13*	28-Apr-14									Eart
Clearing & Development of Access Roa	ad	35	180		26-Jun-13	13-Aug-13		V							
Clearing & Development of Crane Path	n & WTG Pads	258	44		05-Aug-13	30-Jul-14									
WTG Transportation		40	3		01-Jul-14	26-Aug-14		1					1		
TRN-01-11	Delivery of Turbines to Port or Rail head	0	0	0%		01-Jul-14*									
TRN-02-01	Receive Tower Components @ Site	30	3	0%	16-Jul-14	26-Aug-14									
WTG Construction		85	18		09-May-14	04-Sep-14									-
WTG 1		62	41		09-May-14	04-Aug-14									
WTG 2		63	39		12-May-14	06-Aug-14									-
WTG 3		64	37			08-Aug-14									
WTG 4		65	35		14-May-14										
WTG 5		66	33			14-Aug-14									
WTG 6 WTG 7		67	31 29			18-Aug-14									
WTG 8		52 52	29			20-Aug-14 22-Aug-14									
WTG 9		38	25			26-Aug-14									
WTG 10		26	18		31-Jul-14										
Collector & Substation		283	17		07-Aug-13				-		-	_		_	<u> </u>
Ridgeline OH Collector		115	180		14-Aug-13										
Underground Collector		258	17		11-Sep-13				-				1		
Substation		163	137		07-Aug-13						-			7	
Switchyard		161			07-Aug-13				-					7	
O&M Building		209	91		07-Aug-13										
Project Completion & Turnover		18	0			30-Sep-14									
COM-01-02	Energize Circuit - WTG's 1-10	0	0	0%		04-Sep-14									
COM-00-05	Testing & Commissioning - WTG's 1-10	15	0	0%	08-Sep-14	26-Sep-14									
COM-01-04	Substantial Completion	0	1	0%		08-Sep-14							1		
COM-01-05	Final Turnover Packages & As-Builts	15	1	0%	09-Sep-14	29-Sep-14									
COM-00-16	Final Commissioning	2	0		29-Sep-14	30-Sep-14	+								
COM-01-06	Final Completion	0	0	0%	-5 500 14	30-Sep-14 30-Sep-14									
COM-01-16	Project COD	0	0	0%		30-Sep-14							1		
COM-01-10		U	0	070		30-3ep-14		i	<u> </u>	i i		1		i	<u> </u>

Actual Work

Remaining Work

Critical Remaining Work

♦ ♦ Milestone

Summary

Eolian-Antrim Wind Power Project

DRAFT Construction Schedule - 19-Jan-12

Reed & Reed, Inc.





	20	14										
May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
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EXHIBIT 9

RESPONSE TO ENV-WT 904.01 GENERAL DESIGN CONSIDERATIONS

PART Env-Wt 904: DESIGN AND CONSTRUCTION OF STREAM CROSSINGS

Response to Env-Wt 904.01: General Design Considerations

Stream Crossing at STA. 18+75

This stream crossing was designed in accordance with the "New Hampshire Stream Crossing Guidelines – May 2009". The proposed culvert is an open bottom concrete box culvert with a width of 10 feet. The 10-foot width will allow construction of the culvert beyond the top-of-bank of the stream, leaving the channel undisturbed. As such, the applicable requirements of Env-Wt 904.01 <u>General Design</u> <u>Considerations are met</u>. Please note that Env-Wt 904.01(f) does not apply.

As a Tier One Stream Crossing (contributing area is approximately 106 acres), the requirements of Env-Wt 904.02 also apply. The contributing watershed is less than 200 acres. Based on the stormwater model, the culvert passes the 50-year storm event. The crossing is designed with an open bottom box culvert. If construction involves any in-stream work, it will be limited to low flow conditions.

Stream Crossing at STA. 2+25

The proposed access road will cross an intermittent stream at approximately STA. 2+25. Because of project-specific roadway design requirements, compliance with sections Env-Wt 904.01 and 904.02 is not practicable. Therefore the applicant requests approval of an Alternative Design under section Env-Wt 904.09.

"Practicable" is defined in section Env-Wt 101.73 as "available and capable of being done after taking into consideration cost, existing technology, and logistics, in light of overall project purposes".

A contractor with experience with this type of project was consulted throughout the design process. Considering the construction and delivery vehicles required for this project, the contractor recommended that roadway slopes greater than 12% be avoided. In order to comply with this recommendation and ensure safe access during construction, approximately ten feet of cut is required in the vicinity of the stream crossing. Damage to this stream is unavoidable and irreparable, and compliance with the abovereferenced sections is not practicable.

EXHIBIT 10

PROPERTY INFORMATION

Antrim Wind Park Property Owners

Last Name	First Name	Мар	Lot(s)	Address 1	Address 2	Town	State	Zip Code
Ott	Mike	212	027; 030; 034	354 Keene Road	P.O. Box 160	Antrim	NH	04330
Whittemore	Paul J.	236	002	15 Dartmouth Drive	P.O. Box 528	Auburn	NH	03032
Cotran	Steven R.	236	001	26 McIntosh Lane		Bedford	NH	03110
c/o Charles Bean III	Antrim Limited Partnership	235	014	477 Washington Street		Norwood	MA	02062
Paul and Helen								
Whittemore,								
Trustees	Whittemore Trust	239	001	P.O. Box 528		Auburn	NH	03032

ENV.

ENV. JACK KENWORTHY EOLIAN RENEWABLE ENERGY LLC 155 FLEET OT PORTSMOUTH NN 03801-4050

Doc # 1104944 Jan 26, 2011 12:13 PM Book 8288 Page 0340 Page 1 of 9 Register of Deeds, Hillsborough County Samela O Caughlin

ANTRIM WIND ENERGY LLC (ANTRIM, NH - TAX MAP #236 /PARCEL #002-000 -PAUL WHITTEMORE

EXHIBIT C MEMORANDUM OF LEASE

PARTIES TO LEASE:

LESSOR Paul and Helen Whittemore c/o Paul Whittemore P.O. Box 528 Auburn, NH 03032

LESSEE Antrim Wind Energy LLC c/o Eolian Renewable Energy 155 Fleet Street Portsmouth, New Hampshire 03801

Lessor is the owner of that certain real property described in Exhibit A attached hereto ("Lessor's Land"). Lessor leases to Lessee all or a portion of Lessor's Property as depicted on the map attached hereto as Exhibit B (the "Leased Premises"), together with the non-exclusive right of ingress to and egress from Windpower Facilities (defined in the Lease) located on the Leased Premises, adjoining properties and elsewhere over and across the Leased Premises and Lessor's Land by means of existing roads and lanes, if any, or otherwise by such route or routes as Lessee may construct from time to time.

Lease shall be for an initial term of twenty-five (25) years and shall commence on the Effective Date.

Lessee shall have the option to renew the Lease for one additional twenty-five (25) year term.

PREMISES:

TERM OF LEASE:

EXTENSION TERM:

ANTRIM WIND ENERGY LLC (ANTRIM, NH – TAX MAP #236 /PARCEL #002-000 – PAUL WHITTEMORE

DATED at AUSUNN NH

this 6 day of January, 2011.

By:

Its: Owner/Self

STATE OF NEW HAMPSHIRE

) ss.:

COUNTY OF BOCKINGHAM

On this $l_i^{\dagger h}$ day of January 2011, before me, the undersigned, a Notary Public in and for said State, personally appeared Paul Whittemore, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his, signature on the instrument, the individual(s) or the person(s) upon behalf of which the individual acted, executed the instrument.

DATED at Portsmonth this 4 day of January 2011. By: Its

STATE OF NEW HAMPSHIRE

) ss.:

COUNTY OF ROCKINGHAM

On this 4 day of January, 2011, before me, the undersigned, a Notary Public in and for said State, personally appeared John Kenworthy, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his, signature on the instrument, the individual(s) or the person(s) upon behalf of which the individual acted, executed the instrument.



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022307

ANTRIM WIND ENERGY LLC (ANTRIM, NH – TAX MAP #236 /PARCEL #002-000 – PAUL WHITTEMORE

EXHIBIT A to Memorandum of Lease

0009937

2000 FEB 24 AM 9: 22

WARRANTY DEED

KNOW ALL MEN BY THESE PRESENTS:

That I, MARVIN W. CUDDIHY, a/k/a Marvin Cuddihy, an unremarried widow, of 19 Davisville Road, Wilton, in the County of Hillsborough and State of New Hampshire,

for consideration paid,

grants to PAUL WHITTEMORE and CAROLE WHITTEMORE, husband and

wife, both of 29 Sagharbor Drive, Auburn, in the County of Rockingham and the State of New Hampshire, and HELEN WHITTEMORE, of P. O. Box 242, Antrim, in the County of Hillsborough and State of New Hampshire, all as joint tenants with rights of survivorship,

with WARRANTY covenants,

Two certain tracts or parcels of land with the buildings thereon, if any, situated in Antrim, in the County of Hillsborough and State of New Hampshire, bounded and described as follows:

TRACT I

Beginning at the Northeast corner of the tract at land now or formerly of John B. Jameson; thence Westerly by said Jameson land along the stone wall to land formerly of Helen C. Thayer; thence Southerly along a stone wall adjoining land of said Thayer to a stake and stones at land now or formerly of John B. Jameson; thence Easterly along said Jameson land to stone wall at a corner of land now or formerly of said Jameson and land now or formerly of John Cuddihy; thence Northerly along land of said Cuddihy and Jameson along stone wall to the point of beginning.

Containing thirty (30) acres, more or less, and being known as the Nesmith Pasture.

DEPARTMENT OF REVENUE ADMINISTRATION		REAL ESTATE
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THOUSAND	HUNDRED	LINE AND WE DOLL

۰.

The above premises are subject however to a right of way and privilege of roadway being built to land now or formerly of Helen C. Thayer or her heirs, executors or assigns, of thirty (30) feet in width at such point as possible for best construction, all as set forth in deed of Helen C. Thayer to John Cuddihy, dated August 6, 1914 and recorded in Volume 723, Page 336, of the Hillsborough County Registry of Deeds.

TRACT II

Beginning at the Southwest corner of the premises at land now or formerly of one Harrington; thence Northerly by said Harrington land to land formerly of Alfred G. Holt, now or formerly of Arthur F. Holt and Gladys H. Warner; thence Easterly by land of said Holt-Warner to land now or formerly of Alvin Brown; thence Southerly by said Brown land and land formerly of James W. Jameson and of John Cuddihy to land now or formerly of R. B. Harrington; thence Westerly by said Harrington land to the place of beginning.

Containing one hundred ten (110) acres, more or less, and being known as the Mountain Pasture.

Meaning and intending to convey the same premises conveyed to Marvin Cuddihy and Sarah Cuddihy, as joint tenants with rights of survivorship, by deed of Alice E. Cuddihy, Mary I. Boynton and Matthew N. Cuddihy, dated October 12, 1965 and recorded in Volume 1853, Page 26, of the Hillsborough County Registry of Deeds. The said Sarah J. Cuddihy died on December 16, 1979 and her death certificate is to be recorded with the Hillsborough County Registry of Deeds. The grantor herein derives his title as surviving joint tenant.

This conveyance is made subject to Current Use Classification recorded in Volume 3696, Page 136, of the Hillsborough County Registry of Deeds.

And I, Marvin W. Cuddihy, and unremarried widow, release to said Grantees my rights of Homestead and other interests in said premises.

Dated this _14th day of January, 2000. Marvin W. C Cuddihy

25

STATE OF NEW HAMPSHIRE

County of Hillsborough

The foregoing instrument was acknowledged before me this $\frac{44}{14}$ day of January, 2000, by MARVIN W. CUDDIHY,

Name Far Title /

My Commission Expires: 12/2010000

Doc # 1019268 Apr 29, 2010 2:41 PM Book 8199 Page 0260 Page 1 of 3 Register of Deeds, Hillsborough County Camela O Couglin



#11 Blodgett, Makechnie & Lawrence

QUITCLAIM DEED

I, CAROLE WHITTEMORE, single woman, of Auburn, County of Rockingham and State of New Hampshire, for consideration paid, grant to PAUL J. WHITTEMORE, of 29 Sagharbor Drive (with a mailing address of P. O. Box 528), Town of Auburn, County of Rockingham and State of New Hampshire 03032-0528, and HELEN M. WHITTEMORE, of Brimstone Corner Road (with a mailing address of P. O. Box 242), Town of Antrim, County of Hillsborough and State of New Hampshire 03440-0242, as joint tenants with rights of survivorship, with **QUITCLAIM covenants**, all my right, title and interest in

Two certain tracts or parcels of land, with the buildings thereon, if any, situate in the Town of **Antrim**, in the County of Hillsborough and State of New Hampshire, bounded and described as follows:

Tract I

Beginning at the northeast corner of the tract at land now or formerly of John B. Jameson; thence running

WESTERLY by land of said Jameson along the stone wall to land formerly of Helen C. Thayer; thence running

SOUTHERLY by a stone wall adjoining land of said Thayer to a stake and stones at land now or formerly of John B. Jameson; thence running

EASTERLY by land of said Jameson to a stone wall at a corner of land now or formerly of said Jameson and land now or formerly of John Cuddihy; thence running

NORTHERLY by land of said Cuddihy and Jameson along a stone wall to the point of beginning.

Containing thirty (30) acres, more or less, and being known as the Nesmith Pasture.

BLODGETT, MAKECHNIE & LAWRENCE, P.L.L.C. - ATTORNEYS AT LAW - PETERBOROUGH, NH 03458-0574

Book 8199 Page 0261 Page 2 of 3

The above premises are subject however to a right of way and privilege of roadway being built to land now or formerly of Helen C. Thayer or her heirs, executors or assigns, of thirty (30) feet in width at such point as possible for best construction, all as set forth in deed of Helen C. Thayer to John Cuddihy, dated August 6, 1914 and recorded in the Hillsborough County Registry of Deeds at Volume 723, Page 336.

Tract II

Beginning at the southwest corner of the premises at land now or formerly of one Harrington; thence running

NORTHERLY by land of said Harrington to land now or formerly of Arthur F. Holt and Gladys H. Warner; thence running

EASTERLY by land of said Holt-Warner to land now or formerly of Alvin Brown; thence running

SOUTHERLY by land of said Brown and land formerly of James W. Jameson and of John Cuddihy to land now or formerly of R. B. Harrington; thence running

WESTERLY by land of said Harrington to the place of beginning.

Containing one hundred ten (110) acres, more or less, and being known as the Mountain Pasture.

Meaning and intending to convey the grantor's interest in the premises conveyed to Paul Whittemore, Carole Whittemore and Helen Whittemore by deed of Marvin W. Cuddihy, dated January 14, 2000, recorded in the Hillsborough County Registry of Deeds at Book 6211, Page 1465.

The premises are conveyed subject to the notice of current use classification filed by the Town of Antrim in the Hillsborough County Registry of Deeds at Book 3696, Page 136.

This conveyance is exempt from the New Hampshire real estate transfer tax under the provisions of RSA 78-B:2,XIII as a transfer pursuant to a decree of divorce issued by the Merrimack Superior Court, Docket Number 07-M-0495 on July 10, 2007, and under the provisions of RSA 78-B:2, IX.

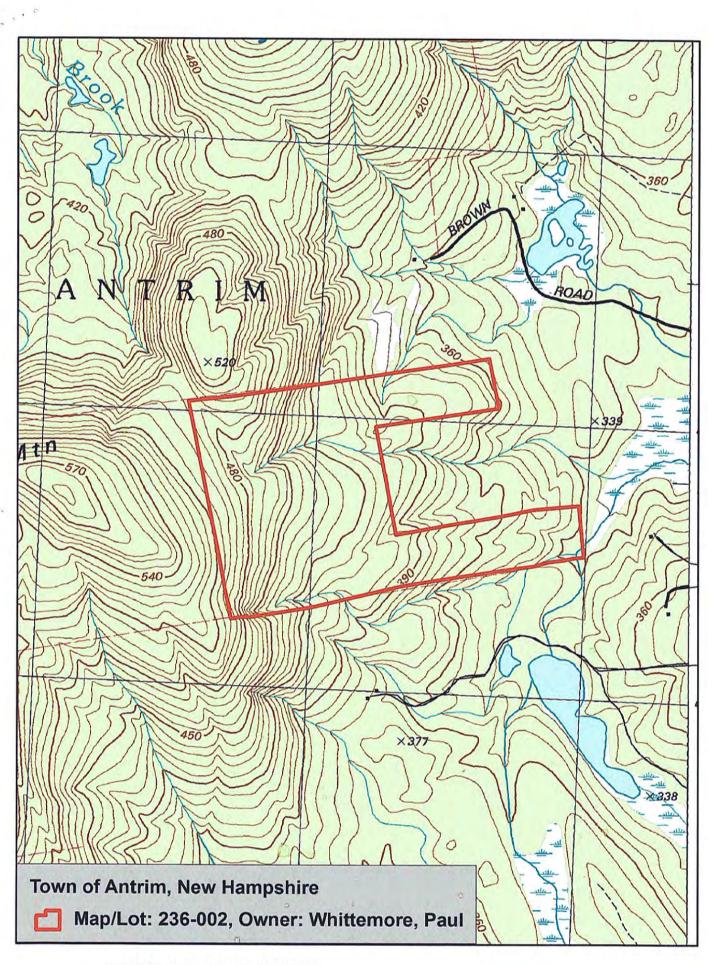
21 day of April 2009. Signed this Whittemore Carole Whittemore

BLODGETT, MAKECHNIE & LAWRENCE, P.L.L.C. - ATTORNEYS AT LAW - PETERBOROUGH, NH 03458-0574

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Book 8199 Page 0262 Page 3 of 3

STATE OF NEW HAMPSHIRE COUNTY OF ROCKINGHAM The foregoing instrument was acknowledged before me this $\frac{21}{2009}$ day $\frac{1}{2009}$, 2009, by Carole Whittemgre. of 1 2 1 Notary the Peace Public/Justice of 30/2013 CARC Printed Name 1heos AROI Expiration Date CARCL A. THEOS, Justice of the Peace My Commission Expires January 30, 2013 3 BLODGETT, MAKECHNIE & LAWRENCE, P.L.L.C. - ATTORNEYS AT LAW - PETERBOROUGH, NH 03458-0574



ORIGINAL NOT SUITABLE FOR PROPER REPRODUCTION

SHORT FORM OPTION AGREEMENT

Dr. Lyle J. Micheli and Mrs. Anne J. Micheli, whose mailing address is 319 Longwood Avenue, Boston, MA 02155 ("Grantor") and Antrim Wind Energy LLC a Delaware limited liability company having a mailing address at c/o Eolian Renewable Energy, LLC, 155 Fleet Street, Portsmouth, New Hampshire 03801 ("Grantee"), have entered into an option agreement dated September 8, 2011 (the "Option").

1. <u>Grant of Option</u>. For valuable consideration, Grantor has granted to Grantee the exclusive right and option to purchase an Easement encumbering the premises situated in the Town of Antrim, Hillsborough County, New Hampshire, being more particularly described in **Exhibit A** attached hereto (the "Property"), subject to the terms and conditions contained in this Option. The easement (the "Easement") shall be in the form attached hereto as **Exhibit B**.

2. <u>Expiration Date</u>. This Option shall expire two (2) years from the date hereof at 5:00 p.m. in the time zone in which the Property is located. For additional consideration, Grantee may postpone the expiration of this Option for an additional period of two (2) years.

3. <u>Exercise of Option</u>. This Option may be exercised by Grantee by giving written notice thereof to Grantor prior to the expiration of this Option.

4. <u>Easement</u>. Within thirty (30) days after the exercise of this Option, Grantor shall execute and deliver to Grantee an original of the Easement.

5. <u>Due Diligence Inspections</u>. Grantee, its agents, contractors, and subcontractors, may enter upon the Property at reasonable times prior to exercise of this Option, and prior to the granting of the Easement, in order to inspect the Property and/or to perform surveys and other physical inspections (collectively, the "Due Diligence Inspections"); provided, however, that the Grantee shall not perform any physical alterations to the Property without the written permission of the Grantor. In the event Grantee determines, in its sole discretion, that any one or more of the Due Diligence Inspections is not acceptable to Grantee, then Grantee may terminate this Option and be relieved of its obligations hereunder.

6. Failure to Exercise. In the event Grantee fails to exercise this Option before its

expiration for any reason other than a default by Grantor, this option shall terminate, and none of the parties hereto shall have any further rights, claims, or obligations with respect to this Option.

8. <u>Assignment</u>. Grantee shall have the right to assign its rights and obligations under this Option without the consent of Grantor. All acts performable by Grantee under this Option may be performed by any assignee. Any assignment shall be in writing, acknowledged, and recorded in the Registry of Deeds in the county where the property is located. Such assignment shall relieve Grantee from the obligations of this Option.

9. <u>Licenses and Permits</u>. Grantor agrees that during the term of this Option, Grantee may attempt to obtain any licenses and/or permits relating to the Property which Grantee finds necessary or desirable for its contemplated use of the Property, and Grantor shall cooperate with Grantee in obtaining the same, at no expense to Grantor.

10. <u>Notice</u>. All notices pursuant to this Option shall be in writing and shall be delivered by hand, mailed overnight courier or by certified mail, postage prepaid, return receipt requested, to the following addresses:

- To the Grantor(s):
 Dr. and Mrs. Lyle J. Micheli
 319 Longwood Avenue
 Boston, MA 02155
- (ii) To the Grantee(s): Antrim Wind Energy LLC
 c/o Eolian Renewable Energy, LLC
 155 Fleet Street
 Portsmouth, New Hampshire 03801
 Attention: Jack Kenworthy

with a copy to:

Jeffrey T. Selser, Esq. Verrill Dana LLP One Portland Square Portland, Maine 04101

Notices shall be deemed given on the date mailed, or, if hand delivered, on the date of delivery. Either party may, by such manner of notice, substitute persons or addresses for notice other than those listed above.

11. <u>Miscellaneous</u>. This Option shall be binding upon and inure to the benefit of Grantor and Grantee, their successors and assigns. This Option is, and shall be, governed in all respects (including validity, construction, interpretation, and effect) by the laws of the State of New Hampshire, without giving effect to its principles or rules of conflict of laws to the extent that such principles or rules would require or permit the application of the laws of another

jurisdiction. Should any provision of this Option for any reason be declared invalid or unenforceable, such decision shall not affect the validity or enforceability of any other provisions of this Option, which shall remain in full force and effect. This Option shall be recorded in the Registry of Deeds in the County in which the Property is located. IN WITNESS WHEREOF, Grantor and Grantee have executed or caused this instrument to be executed as of the date first above written.

WITNESS:

GRANTOR(s)

DR. LYLE MICHELI

Cristina C Murphy

2000 By

MRS. ANNE J. MICHELI

Custura C Murpluz

By: Unic Michili

WITNESS:

Lickr

GRANTEE ANTRIM WIND ENERGY LLC

By: Name: John B. Kenworthy Its. Executive Officer

STATE OF Magga Chuset

September 16, 2011

Then personally appeared the above-named Lyle Micheli in his/her capacity as owner/joint tenant of the Property and acknowledged the foregoing instrument to be his/her free act and deed.

00009

DI. Dyly J. Wilen

Before me,

totary Public

JILL E. MUISE Notary Public COMMONWEALTH OF MASSACHUSETTS My Commission Expires July 20, 2018

STATE OF Maggachugettes County of SUHTOP, SS

September 16, 2011

Then personally appeared the above-named Anne J. Micheli in his/her capacity as owner/joint tenant of the Property and acknowledged the foregoing instrument to be his/her free act and deed.

nue J. Micheli

Mrs. Anne J. Micheli

Before me. Votary Public



STATE OF NEW HAMPSHIRE County of Rockinghars

8 ,2011

Then personally appeared the above-named John B. Kenworthy in his/her capacity as Executive Officer of Antrim Wind Energy LLC and acknowledged the foregoing instrument to be his/her free act and deed in said capacity and the free act and deed of Antrim Wind Energy, LLC.

John B. Kenworthy



Before me, ar INC Notary Public

Exhibit A Property Description and Map

A certain lot or parcel of land situated off Salmon Brook Road in the Town of Antrim, County of Hillsborough, and State of New Hampshire, more particularly described in the deed dated December 6 1996 and recorded at the Hillsborough County Registry of Deeds in Book 5774, Page 1777 and depicted on the map below.

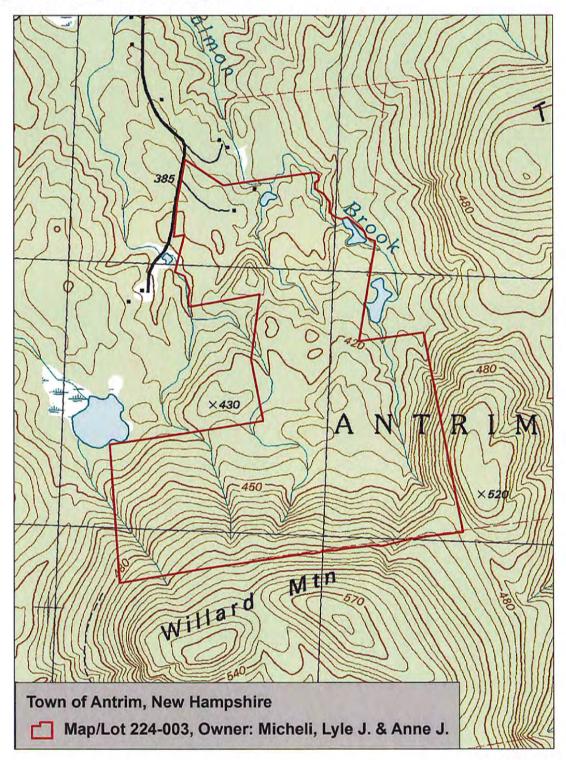


Exhibit B Form of Easement

EASEMENT

THIS EASEMENT is made by Dr. Lyle J. Micheli and Mrs. Anne J. Micheli (collectively, "<u>Grantor</u>"), the owner(s) of a certain lot or parcel of land situated off Salmon Brook Road in the Town of Antrim, County of Hillsborough, and State of New Hampshire, more particularly described in the deed dated December 6 1996 and recorded at the Hillsborough County Registry of Deeds in Book 5774, Page 1777 (hereinafter referred to as the "<u>Servient Land</u>").

WHEREAS, Antrim Wind Energy LLC a Delaware limited liability company having a mailing address at c/o Eolian Renewable Energy, LLC, 155 Fleet Street, Portsmouth, New Hampshire 03801 ("Grantee"), plans to construct and operate a wind power project, including wind turbine generators and towers and related equipment, facilities, infrastructure and substructures (hereinafter referred to as the "Wind Power Project"), on lands near the Servient Land, including (without limitation) the lands described on the attached Exhibit A; and

WHEREAS, the Wind Power Project will emit sound including at levels that may exceed applicable state or local maximum sound level limits for the Servient Land, and may cast shadows onto or produce a shadow flicker effect at the Servient Land;

Now, THEREFORE, for good and valuable consideration received, Grantor hereby grants an easement to Grantee for: (a) the right to have sound generated from the Wind Power Project impact the Servient Land and exceed otherwise applicable state or local maximum sound level limits applicable to locations on the Servient Land; (b) the right to cast shadows or shadow flicker from the Wind Power Project onto the Servient Land; and (c) the right to locate turbines closer than any minimum distance setback requirement to structures or property lines, including the right to have the blades of wind turbines overhang the Servient land;

This Easement shall expire on the earlier to occur of (a) fifty years after the date hereof, or (b) the date on which the Wind Power Project is fully decommissioned and has been abandoned or surrendered by Grantee (or its successors and/or assigns, as the case may be).

This Easement shall extend to, be binding upon and shall inure to the benefit of heirs, personal representatives, successors and assigns of the parties hereto. The burden of the easement hereby granted shall run with the Servient Land, until it expires as set forth above. The benefit of the easement hereby granted is not appurtenant to any particular property, but shall be transferable in whole or in part, and may be sold, leased, assigned, pledged, and mortgaged by Grantee, it being the intent of the parties that such benefit may be transferred to any successors or assignees of Grantee that own or operate the Wind Power Project, as it may be modified, divided or expanded.

As a condition of the grant of this Easement, Grantee agrees to indemnify, defend, and hold Grantor harmless from and against any and all damage, loss, claim, liability, or expense of any kind arising from any claim of bodily injury and/or physical or property damage of any kind present by third parties, and physical damage to or destruction of the Servient Land caused by Wind Power Project, except to the extent arising from the negligence or willful misconduct of Grantor.

The benefit of the easement hereby granted may be enforced by Grantee, its successors and assigns, by any appropriate legal or equitable remedy. In the event that Grantee, its successors or assigns, shall bring an action against Grantor, its successors or assigns, by reason of a breach or violation of this Easement by Grantor, its successors and assigns, the substantially prevailing party in such action shall be entitled to recover their reasonable attorneys' fees and court costs incurred in such action from the substantially non-prevailing party. WITNESS our hands and seals this _____ day of _____, 2011.

In the presence of:

GRANTOR(s)

Print: Dr. Lyle J. Micheli

Print: Mrs. Anne J. Micheli

STATE OF ______

____, 20__

Personally appeared the above-named LYLE J. MICHELI and ANNE J. MICHELI and [severally] acknowledged the foregoing instrument to be his/her/their free act and deed.

Before me,

Notary Public Print Name:______ My Commission Expires:______

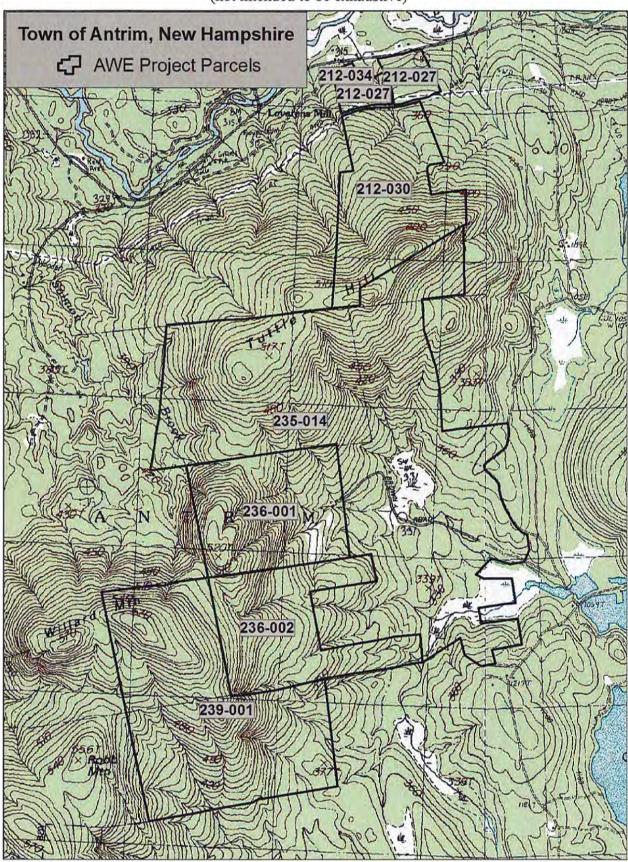


EXHIBIT A Proposed Wind Power Project Lands (not intended to be exhaustive)

Doc # 1028814 Jun 24, 2010 10:40 AM Book 8214 Page 2699 Page 1 of 6 Register of Deeds, Hillsborough County Camela O Caughton

EOLIAN RENEWABLE ENERGY LLC 155 FLEET ST. PORTSMONTH NH 03801 ATTN: JACK KENWORTHY

Antrim Wind (Antrim, NH – Map #212 Lot #'s 212-030-000; 212-027-000; 212-034-000 – Michael J. Ott)

EXHIBIT C MEMORANDUM OF LEASE

PARTIES TO LEASE:

LESSOR Michael J. Ott P.O. Box 160 Antrim, New Hampshire 03440

LESSEE

Antrim Wind Energy LLC c/o Eolian Renewable Energy 155 Fleet Street Portsmouth, New Hampshire 03801

Lessor is the owner of that certain real property described in <u>Exhibit A</u> attached hereto ("Lessor's Land"). Lessor leases to Lessee all or a portion of Lessor's Property as depicted on the map attached hereto as <u>Exhibit B</u> (the "Leased Premises"), together with the non-exclusive right of ingress to and egress from Windpower Facilities (defined in the Lease) located on the Leased Premises, adjoining properties and elsewhere over and across the Leased Premises and Lessor's Land by means of existing roads and lanes, if any, or otherwise by such route or routes as Lessee may construct from time to time.

Lease shall be for an initial term of twenty-five (25) years and shall commence on the Effective Date.

Lessee shall have the option to renew the Lease for one additional twenty-five (25) year term.

PREMISES:

TERM OF LEASE:

EXTENSION TERM:

CONFIDENTIAL

Antrim Wind (Antrim, NH – Map #212 Lot #'s 212-030-000; 212-027-000; 212-034-000 – Michael J. Ott)

DATED at Portsmouth, New Hampshire this 18th day of December 2009.

Antrim Wind Energy LLC By: enworthy Name: John B. Its: Manager

STATE OF NEW HAMPSHIRE ss.: COUNTY OF HILLSBORD Rockingham

On this 18th day of December, 2009, before me, the undersigned, a Notary Public in and for said State, personally appeared John B. Kenworthy, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his, signature on the instrument, the individual(s) or the person(s) upon behalf of which the individual acted, executed the instrument.

Commission Expires May Notary Public

DATED at Town Hall , Antrim NH this 24 day of Devember, 2009.

MICHAEL J.H. OTT

By: Name: N Its: Self

Her 1 Name: Michael J. H. Ott

STATE OF NEW HAMPSHIRE ss.: COUNTY OF HILLSBORO

On this 24 day of <u>December</u>, 2009 before me, the undersigned, a Notary Public in and for said State, personally appeared Michael J. H. Ott, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his, signature on the instrument, the individual(s) or the person(s) upon behalf of which the individual acted, executed the instrument.



Notary Public

CONFIDENTIAL

EXHIBIT A to MEMORANDUM OF LEASE

6038778

2006 JUN - 2 PM 2: 37

A Lo J Record and return to: Craighead and Martin, PLLC 62 Stark Street Manchester, NH 03101

2520 TS

STATE OF NEW HAMPSHIRE DEPARTMENT ADMINISTRATION HINDRED AND 20 DOLLARS CONSTRUCTION 06/02/2006 VOID IF ANL TERED

WARRANTY DEED

KNOW ALL MEN BY THESE PRESENTS, That, we, John A. Eddy and Laura C. Eddy, husband and wife, both of 763 Templeton Turnpike Road, Fitzwilliam, County of Cheshire, and State of New Hampshire, for consideration paid, grants to Michael James Hutchins Ott, a single person of 493 Ocean Boulevard, #24, Hampton, County of Rockingham, and State of New Hampshire, with Warranty Covenants:

The following four (4) tracts of land situated in Antrim, County of Hillsborough and State of New Hampshire:

Tract 1:

A certain tract of land situated in the northwest part of Antrim in the County of Hillsborough and State of New Hampshire, bounded and described as follows:

Beginning at the Northeast corner of the premises at a stake and stones by an old road leading from near the dwelling formerly occupied by Walter Buchanan to the dwelling of the late William R. Carr; thence

- 1. Westerly by the same old road about 101.5 rods to land formerly owned by the late Hiram Griffin; thence
- 2. Southerly by said Griffin land about 62 rods to the corner of the wall by land of the Steele heirs; thence
- 3. Easterly by said last mentioned land about 94 rods to the corner of the wall by land of the late William R. Carr; thence
- 4. Northerly by said Carr land about 19.5 rods to a stake and stones; thence

ORIGINAL NOT SUITABLE FOR PROPER REPRODUCTION

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9-40-33

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5. Easterly by said Carr land about 21.5 rods to a stake and stones; thence

6. Northerly by said Carr land about 49 rods to the first named bound.

Estimated to contain 43 acres, more or less.

Tract 2:

Also another tract of land situated in the northwest part of said Antrim, New Hampshire, bounded and described as follows:

Beginning at the Northeast corner of the premises; thence

- 1. Southerly by land formerly owned by Samuel Tuttle 52 rods; thence
- 2. Westerly by the wall by land formerly owned by Dodge to the Northwest corner of said Dodge land; thence
- 3. Southerly by said Dodge land to land formerly owned by Davis; thence
- 4. Westerly by said Davis land and land formerly owned by Handley to land formerly of Samuel Curtis; thence
- 5. Northerly and Easterly by said Curtis land to land formerly owned by John McClure, et al; thence
- 6. Easterly by said McClure land to land formerly owned by Samuel Weston; thence
- 7. Southerly by said Weston land to land formerly owned by Samuel Tuttle, et al, about 57 rods; thence
- 8. Easterly by said Tuttle land to the point of beginning.

Said to contain 150 acres, more or less.

Tract 3:

A certain tract of land with the buildings thereon, if any, situate in the north part of Antrim, Hillsborough County and State of New Hampshire, bounded and described as follows:

Beginning at the Northwest corner of the premises at a stake and stones by land formerly owned by John Dodge; thence

- 1. Southerly by said Dodge land to the old road leading from the former residence of William R. Carr to the former residence of Samuel Dinsmore, to a stake and stones; thence
- 2. Easterly by said road about 37 rods to stake and stones; thence
- 3. Northerly by land formerly owned by Chandler Boutelle to a stake and stones by land formerly owned by Grafton Curtice; thence
- 4. Westerly by said Curtice land to the bound first mentioned.

Estimated to contain 6.5 acres, more or less, but reserving to the Public Service Company of New Hampshire and those claiming under it, any pole rights it may have acquired.

Tract 4:

Also another tract adjoining the above tract, bounded and described as follows:

Beginning at a bound on the Southerly side of the Keene Road, State Highway, at an old roadway; thence

- 1. Easterly by said Keene Road to land formerly of William M. Conn: thence
- 2. Southerly by wall and said Conn land to land formerly of William Boutelle; thence
- 3. Westerly by said Boutelle land to a stake and stones; thence
- 4. Southerly by said Boutelle land to the Old Town Road; Thence
- 5. Westerly by said Old Road to road first above mentioned; thence
- 6. Northerly by said roadway to the bound of beginning.

Said premises are subject to the rights of the public of the State highway and rights heretofore conveyed to the Public Service Company of New Hampshire.

Subject to current use tax recorded with the said Registry of Deeds at Book 3696, Page 137.

This conveyance of the within described properties are not subject to homestead rights.

Meaning and intending to describe and convey the same premises conveyed to the within grantor by Warranty Deed of Donald H. Hardwick, Sr., dated June 10th, 1999, and recorded at the Hillsborough County Registry of Deeds at Book 6115 Page 1762.

SIGNED this 2nd day of June, 2006.

B A. Eddy

Bv Laura C. Eddy

STATE OF NEW HAMPSHIRE COUNTY OF HILLSBOROUGH

On this 2nd day of June, 2006, personally appeared the above-named John A. Eddy and Laura C. Eddy, known to me (or satisfactorily proven) to be the persons whose names are subscribed to the foregoing instrument, and acknowledged that they executed the same in that capacity, and for the purposes therein contained.



Notary Public/Justice of the Peace My commission expires:_____

BK7685PG086

ENV EOLIAN RENEWABLO ENERGY LLC 155 FLEET ST PORTSMOUTH, NH 035 03501-4050

Doc # 1063367 Dec 23, 2010 1:38 PM Book 8277 Page 0354 Page 1 of 4 Register of Deeds, Hillsborough County Barnela D Caughlin

ANTRIM WIND ENERGY (ANTRIM, NH – TAX MAP #236 /PARCEL #001-000 – STEVEN R. COTRAN)

EXHIBIT C MEMORANDUM OF LEASE

PARTIES TO LEASE:

LESSOR Mr. Steven R. Cotran 26 McIntosh Lane Bedford, NH 03110

LESSEE Antrim Wind Energy LLC c/o Eolian Renewable Energy 155 Fleet Street Portsmouth, New Hampshire 03801

Lessor is the owner of that certain real property described in <u>Exhibit A</u> attached hereto ("Lessor's Land"). Lessor leases to Lessee all or a portion of Lessor's Property as depicted on the map attached hereto as <u>Exhibit B</u> (the "Leased Premises"), together with the non-exclusive right of ingress to and egress from Windpower Facilities (defined in the Lease) located on the Leased Premises, adjoining properties and elsewhere over and across the Leased Premises and Lessor's Land by means of existing roads and lanes, if any, or otherwise by such route or routes as Lessee may construct from time to time.

> Lease shall be for an initial term of twenty-five (25) years and shall commence on the Effective Date.

> Lessee shall have the option to renew the Lease for one additional twenty-five (25) year term.

PREMISES:

TERM OF LEASE:

EXTENSION TERM:

022307

ANTRIM WIND ENERGY (ANTRIM, NH – TAX MAP #236 /PARCEL #001-000 – STEVEN R. COTRAN)

DATED at Manchenter this 21 thay of Dark -, 2010. By:

Name: Steven R. Cotran Its: Self/landowner

STATE OF NEW HAMPSHIRE

COUNTY OF HIS MAUCH

) ss.:

On this 21^{-1} day of December, 2010, before me, the undersigned, a Notary Public in and for said State, personally appeared Steven R. Cotran, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his, signature on the instrument, the individual(s) or the person(s) upon behalf of which the individual acted, executed the instrument

Notary Public this 10 day of Duce DATED at why. 2010. innini By: Name John B. Kenworthy Its: Manager

STATE OF NEW HAMPSHIRE

) ss.:

COUNTY OF ROCKINGHAM

On this 20th day of December, 2010, before me, the undersigned, a Notary Public in and for said State, personally appeared John B. Kenworthy, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his, signature on the instrument, the individual(s) or the person(s) upon behalf of which the individual acted, executed the instrument.

Notary Public

nicole Scan

EXPIRES

ANTRIM WIND ENERGY (ANTRIM, NH - TAX MAP #236 /PARCEL #001-000 - STEVEN R. COTRAN)

EXHIBIT A to Memorandum of Lease

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2006 SEP 13 AM11:11

Mc Kenney + Bausha 10.39 No to QUITC **QUITCLAIM DEED** NOW EVERYONE BY THESE PRESENTS

That Diane Cotran, single, of 83 Rosewell Road, Town of Bedford, Hillsborough County, State of New Hampshire, for consideration paid, grants to Steven R. Cotran, single, of 26 McIntosh Lane, Town of Bedford, Hillsborough County, State of New Hampshire, with quitclaim covenants

A certain tract or parcel of land, with the buildings thereon, situated in the Town of Antrim, County of Hillsborough, State of New Hampshire, on Pigeon Mountain, being more particularly bounded and described as follows:

Containing one hundred thirty (130) acres, be the same more or less, and is Lot #21 in the Great right number five, drawn to the original right of Pierce and Moore, bounded on the north by land now or formerly of Artemus Brown, on the east by land now or formerly of George Brown, on the south by land now or formerly of Condry and others, and on the west by Hubbard Lot, so-called.

Meaning and intending to describe and convey the same premises conveyed to Diane Cotran, by Ouitclaim Deed of Steven R. Cotran (a/k/a/ Steven Cotran) dated November 25, 1997 and recorded at Volume 5877, Page 1149, Hillsborough County Registry of Deeds.

This conveyance is made pursuant to the terms of the decree of divorce In the Matter of Steven R. Cotran and Diane M. Cotran, Hillsborough County Superior Court, and is therefore exempt from New Hampshire real estate transfer taxes pursuant to RSA 78-B:2, XIII.

The Grantor releases to the Grantee all rights of homestead and other interests therein.

Dated:

Diane Cotran

he Peace Aletary Public

CATHERINE P. BAUSHA USTICE OF THE PEACE - NEW HAMPSHIRE My Commission Expires February 22, 2011

State of New Hampshire, County of Hillsborry

2006

37PG 150

Personally appeared Diane Cotran, known to me, or satisfactorily proven, to be the person whose name is subscribed to the foregoing instrument and acknowledged that s/he executed the same for the purposes therein contained.

Before me,

Justice

ANTRIM WIND ENERGY (ANTRIM, NH – TAX MAP #236 /PARCEL #001-000 – STEVEN R. COTRAN)

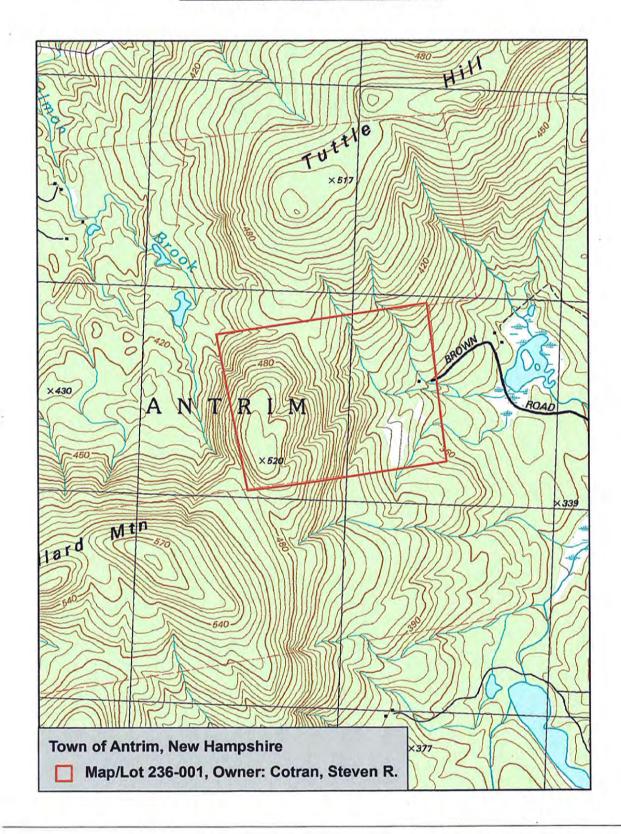


EXHIBIT B to Memorandum of Lease

Please return to #11 Blodgett, Makechnie & Lawrence

Doc # 1114961 Mar 24, 2011 2:47 PM Book 8304 Page 1113 Page 1 of 6 Register of Deeds, Hillsborough County Camela D Caughlin

ANTRIM WIND ENERGY LLC (ANTRIM, N.H. - TAX MAP #239/PARCEL #001-000-ARTHUR WHITTEMORE, ET. AL., TRUSTEES OF WHITTEMORE TRUST)

MEMORANDUM OF LEASE

PARTIES TO LEASE:

PREMISES:

TERM OF LEASE:

EXTENSION TERM:

LESSOR Helen M. Whittemore and Paul J. Whittemore, Trustees of the Whittemore Trust c/o Paul J. Whittemore P. O. Box 528 Auburn, New Hampshire 03032-0528

LESSEE

Antrim Wind Energy, LLC c/o Eolian renewable Energy 155 Fleet Street Portsmouth, New Hampshire 03801

Lessor is the owner of that certain real property described in <u>Exhibit A</u> attached hereto ("Lessor's Land"). Lessor leases to Lessee all or a portion of Lessor's Property as depicted on the map attached hereto as <u>Exhibit B</u> (the "Leased Premises"), together with the non-exclusive right of ingress to and egress from Windpower Facilities (defined in the Lease) located on the Leased Premises, adjoining properties and elsewhere over and across the Leased Premises and Lessor's Land by means of existing roads and lanes, if any, or otherwise by such route or routes as Lessee may construct from time to time.

Lease shall be for an initial term of twenty-five (25) years and shall commence on the Effective Date.

Lessee shall have the option to renew the Lease for one additional twenty-five (25) year term.

CERTIFICATE OF TRUSTEE:

The undersigned Trustees, as Trustees of the Whittemore Trust, under Indenture of Trust dated October 2, 1992, by Arthur F. Whittemore, Helen M. Whittemore and Paul J. Whittemore, and thereto have full and absolute power in said trust agreement to convey any interest in real estate and improvements thereon held in said trust and no purchaser or third party shall be bound to inquire whether the trustees have said power or are properly exercising said power or to see to the application of any trust asset paid to the Trustees for a conveyance thereof.

DATED at

this 10 day of January, 2011. By:

Name. Paul J. Whittemore Its: Owner/Trustee

By:

Helen M W

Name: Helen M. Whittemore Its: Owner/Trustee

STATE OF NEW HAMPSHIRE COUNTY OF Rochingham

On this <u>lot</u> day of January, 2011, before me, the undersigned, a Notary Public in and for said State, personally appeared Paul J. Whittemore, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual or the person upon behalf of which the individual acted, executed the instrument.

Notary Public/Justice of the Peace SHARON A. (ANN Printed Name Expiratio

STATE OF AZ COUNTY OF MARICORA

On this 22 day of January, 2011, before me, the undersigned, a Notary Public in and for said State, personally appeared Helen M. Whittemore, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her capacity, and that by her signature on the instrument, the individual or the person upon behalf of which the individual acted, executed the instrument.



IACK BOOMIFIELD Notary Public -Arizona Maricopa County Expires 09/19/2013

Notary Public 60m field 9/19/2013 Expiration Date rinted Name

DATED at Portsmouth, New Hampshire this <u>6</u>	day of January, 201
	Antrim Wind Energy LLC
	By: Name: Jack Kenwordy (T.)
	Its: Manager

STATE OF NEW HAMPSHIRE COUNTY OF ROCKINGHAM

On this f day of January, 2011, before me, the undersigned, a Notary Public in and for said State, personally appeared Jack Kenworthy, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual or the person upon behalf of which the individual acted, executed the instrument.

Notary Public/Justice of the Peace cker Printed Name Expiration Date



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ANTRIM WIND ENERGY LLC (ANTRIM, NH – TAX MAP #239 /PARCEL #001-000 – ARTHUR WHITTEMORE, ET. AL., TRUSTEES OF WHITTEMORE TRUST)

EXHIBIT A to Memorandum of Lease

354837 930CT 13 AM 8:28

QUITCLAIM DEED

KNOW ALL MEN BY THESE PRESENTS:

That

ARTHUR F. WHITTEMORE and HELEN M. WHITTEMORE, married, of Cuddihee Hill Road, Antrim, County of Hillsborough and State of New Hampshire,

for consideration paid,

grant to ARTHUR F. WHITTEMORE and HELEN M. WHITTEMORE, married, of Cuddihee Hill Road, Antrim, County of Hillsborough and State of New Hampshire, 03440, and PAUL J. WHITTEMORE, married, of 184 Emery Street, Berlin, County of Coos and State of New Hampshire, 03570, as Trustees of the Whittemore Trust, under Indenture of Trust, dated October

2, 1992,

with QUITCLAIM covenants,

Three certain tracts of land situated in the northwesterly part of Antrim, in the County of Hillsborough and State of New Hampshire, bounded and described as follows:

FIRST: Beginning at the Southeast corner of the premises at a beech tree, marked at the southwest corner of Tenney and Dutton's land; thence westerly, by land of Evans and Hayward to the Worthley pasture; thence northerly by said Worthley pasture to land of Samuel Holt; thence easterly by said Holt's land to land of Tenney and Dutton; thence southerly by said Tenney and Dutton's land to the first named bounds. Estimated to contain one hundred and twenty-one acres (121), more or less.

SECOND: Beginning at the northeast corner of the premises at the northwest corner of land formerly owned by John R. Hills; thence southerly by said land to John Hayward's land; thence westerly by land of said John Hayward and the "Allds Pasture", so-called, to land formerly owned by William Weston, deceased; thence northerly on land formerly owned by said Weston to the "Woodbury Pasture", so-called; thence easterly by said Woodbury Pasture to the bounds first mentioned. Containing one hundred thirteen (113) acres, more or less.

BRIGHTON, FERNALD, TAFT & FALBY - PROFESSIONAL ASSOCIATION - PETERBOROUGH, N. H. 03458-0270

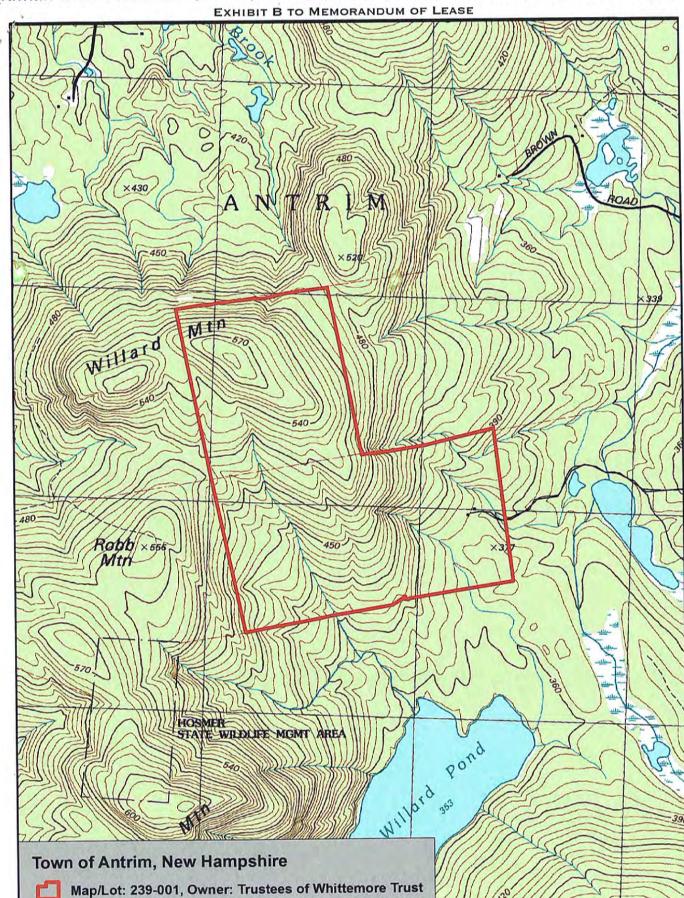
ANTRIM WIND ENERGY LLC (ANTRIM, NH – TAX MAP #239 /PARCEL #001-000 – ARTHUR WHITTEMORE, ET. AL., TRUSTEES OF WHITTEMORE TRUST)

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the corner of by land forme premises to 1 by land now o Worthley and corner of lan walls; thence land now or f formerly of D Hubbard to th three (123) a This con otherwise, st predecessor i	walls running so erly of Lee and Ho and now or former or formerly of sat Hill to the south the south of now or formerly a northerly by lan formerly of Davis Darias Hubbard; th he bound first men acres, and 36 rods neveyance is made a tipulations and a in title in refer	butherly and wes bolden to the sou rly of William W id Weston and la heast corner of y of Samuel Flet nd now or former to the northeas hence westerly b ntioned. Contai s, more or less. subject to all r greements made c ence to the said	restrictions of record or or existing between any premises, so far as
For titl reference is Fellows and <i>I</i> Whittemore.	made to the deed	hittemore and He from Francis R. ore to Arthur F. 1976 and recorde	elen M. Whittemore, Fellows, Ruth M. Whittemore and Helen M. ed with the Hillsborough
SIGNED TATE OF NEW	this 2nd day of O	ctober, 1992.	
	REAL ESTATE TRANSFER TAX	_ Usthing	I Whittemore
THOUSAND XXX HU	UNDRED AND 40 DOLLARS	Helen Helen	M. Whittemore
STATE OF NEW			
COUNTY OF HI	LLSBOROUGH		October 2, 1992
F. WHITTEMOR	me, the undersign E and HELEN M. WE free act and deed	HITTEMORE, and a	A. Futurant
My commissio			and the second s
	COM	MARK D. FERNALD MISSION EXPIRES 6/20/94	The Property of
			- PETERBOROUGH, N. H. 03458-0270

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ANTRIM WIND ENERGY LLC (ANTRIM, NH TAX MAP #239, PARCEL #001-000 - WHITTEMORE TRUST.

EXHIBIT 11

RESPONSE TO ENV-WT 302.04(A)

Response to Env-Wt 302.04(a)

(a) For any major or minor project, the applicant shall demonstrate by plan and example that the following factors have been considered in the project's design in assessing the impact of the proposed project to areas and environments under the department's jurisdiction:

(1) The need for the proposed impact;

Impacts to wetlands have been avoided and minimized to the greatest extent practical. Turbine, access road, substation, and collector system facilities have been carefully sited to meet design, operational, and safety needs while avoiding and minimizing impacts to natural resources, including wetlands.

Nine identified wetlands will be impacted either temporarily or permanently as a result of Project construction and operation. No jurisdictional vernal pools, or areas currently described as potential vernal pools will be impacted as a result of Project construction or operation. In total, approximately 0.19 acres (8,349 square feet) of wetland impact are expected to be incurred as a result of construction and operation of the proposed Project. This small amount of impact is the result of careful Project planning and design, which aimed to avoid and minimize impacts to these important resources. The direct wetland impacts are those which were deemed unavoidable during the Project planning process.

(2) The alternative proposed by the applicant is the one with the least impact to wetlands or surface waters on site;

During the development of the Project the AWE made significant efforts to avoid and minimize impact to wetlands and surface waters. Prior to siting of any facilities, AWE conducted a reconnaissance survey for sensitive resources, including wetlands, streams and natural communities. Once these areas were identified, facilities were sited and formal delineations were conducted. During detailed design of the facility, numerous revisions were made to the iterative Project layout design process to further reduce the level of impact of the Project. However, due to design and construction constrains of wind projects in New England, some level of wetland impact was unavoidable. AWE believes that the Project, as presented, represents the lowest possible degree of impact to wetlands and surface waters. For additional information on the alternatives evaluated for this Project, please refer to Section H of the SEC Application.

(3) The type and classification of the wetlands involved;

Detailed narrative descriptions of all identified wetland features relevant to the Project are provided in the full Wetland Delineation Report, which is provided in Exhibit 5 of this Wetlands Permit Application.

In general, wetlands within the Project area consist primarily of small forested wetlands that occur along skidder trails, in confined pockets in the regional bedrock, in saddle areas along the ridgeline, and in areas with poorly drained soils that support wetland vegetation. Streams within the Project area include unnamed perennial and intermittent streams which drain either to the north toward Route 9, or to the southeast into Gregg Lake. Because the proposed Project area is along a ridgeline and is moderately well drained, very few perennial streams occur. Observations in the field generally suggest that rainfall and snow-melt quickly run off the ridge to lower elevations, without collecting volumes that fill natural depressions or create natural ponds.

A total of nine wetlands will be impacted by Project operation and development. Seven of these are palustarine forested wetlands (five PFO1 and two PFO4), and two are palustarine scrub-shrub wetlands (PSS1) in maintained electric transmission ROW. For detailed descriptions of these wetlands, please see the Wetland Delineation Report, Exhibit 5 of this Application, Table 4-1, pages 7-9.

(4) The relationship of the proposed wetlands to be impacted relative to nearby wetlands and surface waters;

The locations of wetlands to be impacted relative to nearby wetlands and surface waters are illustrated in Appendix A, Figure 2, Maps 1-4 provided in the Wetland Delineation Report, which is Exhibit 5 of this Application.

(5) The rarity of the wetland, surface water, sand dunes, or tidal buffer zone area;

None of the wetlands or surface waters impacted by the Project is considered rare.

(6) The surface area of the wetlands that will be impacted;

In total, approximately 0.19 acres (8,349 square feet) of wetland impact are expected to be incurred as a result of construction and operation of the proposed Project. Specific impacts to individual wetlands are described in Table 4-1 of the Wetland Delineation Report, which is provided in Exhibit 5 of this Application.

(7) The impact on plants, fish and wildlife including, but not limited to:

The Project does not expect to have an undue adverse impact on fish and wildlife species. A detailed discussion of the fish and wildlife impacts associated with the Project is included in Section I of the SEC Application and associated appendices.

- a. Rare, special concern species;
- b. State and federally listed threatened and endangered species;
- c. Species at the extremities of their ranges;
- d. Migratory fish and wildlife;
- e. Exemplary natural communities identified by the DRED-NHB; and
- f. Vernal pools.
- (8) *The impact of the proposed project on public commerce, navigation and recreation;*

A detailed discussion of impact of the Project on public commerce, navigation and recreation is included in Section J of the SEC Application.

(9) The extent to which a project interferes with the aesthetic interests of the general public. For example, where an applicant proposes the construction of a retaining wall on the bank of a lake, the applicant shall be required to indicate the type of material to be used and the effect of the construction of the wall on the view of other users of the lake;

A detailed discussion of the aesthetic impact of the Project is included in Section I of the SEC Application and associated appendix. The Project does not anticipate having an undue adverse impact.

(10) The extent to which a project interferes with or obstructs public rights of passage or access. For example, where the applicant proposes to construct a dock in a narrow channel, the applicant shall be required to document the extent to which the dock would block or interfere with the passage through this area;

The Project is located entirely on private land and any land access is granted at the will of the landowners. The Project will limit access to their immediate project facilities and access to the remainder of the property will remain at the landowner's will. Please see Section J.1 of the SEC application for a further discussion of public rights of passage or access.

(11) The impact upon abutting owners pursuant to RSA 482-A:11, II. For example, if an applicant is proposing to rip-rap a stream, the applicant shall be required to document the effect of such work on upstream and downstream abutting properties;

No wetland impacts will occur within 20 feet of adjacent property boundaries. All abutting property owners will be notified of the proposed project in accordance with NHDES rules. Documentation of this notification is found in Exhibit 4.

(12) The benefit of a project to the health, safety, and well being of the general public;

Public health and safety impacts of the Project are discussed in Section I of the SEC Application.

(13) The impact of a proposed project on quantity or quality of surface and ground water. For example, where an applicant proposes to fill wetlands the applicant shall be required to document the impact of the proposed fill on the amount of drainage entering the site versus the amount of drainage exiting the site and the difference in the quality of water entering and exiting the site;

Due to the lack of groundwater resources on the site, this project is not expected to have any direct or indirect impacts on groundwater drinking resources. The AWE site does not have any aquifers on the project site and there are no source water protection and/or well head protection areas on or adjacent to the site. The closest public water supply well is 1.06 miles from the project development. The project does not propose to make large groundwater withdrawals and thus will have no effect on groundwater supply.

Most of the site is made up of stony soils that are relatively shallow in depth to bedrock, and observations in the field generally suggest that rainfall and snow melt in the spring quickly run off the ridge to lower elevations, without collecting volumes that fill natural depressions or create natural ponds. The small forested wetland areas on the site occur along skidder trails, confined pockets in the regional bedrock, and in saddle areas along the ridgeline. These type of soils limit the value of these wetlands for groundwater recharge. Additionally, wetlands with peaty, organic soils increase the retention time of water, slowing recharge.

The limited ability of the site wetlands to recharge groundwater combined with limited sources of potential project pollutants that would adversely affect the quality of the groundwater results in a very low potential for this project to adversely affect groundwater quality.

The majority of wetlands in the project are perched with shallow depths to bedrock or impervious soils and rely on precipitation, surface sheet flow, and shallow subsurface flows for maintenance of wetland hydrology. There are a few wetlands occurring along benches at the toe of steep slopes where the hydrology of the wetland relies primarily on the discharge of groundwater from breakout seeps. Because the project has minimal wetland impacts (0.19 acres of impact total in 9 distinct wetland areas) and proposes to maintain natural flow patterns to the extent practical, there should be minimal change in groundwater discharge patterns to wetlands.

The intent in the project development has been to minimize surface water and stormwater runoff impacts starting with the initial field survey work through the design phase and by implementing accepted erosion control and stormwater Best Management Practices (BMPs) during construction and operation of the facility. During the field survey portion of the project, areas of drainage including jurisdictional wetland and streams as well as non-jurisdictional drainage (to the extent possible) were mapped during field surveys. The design phase included maintaining natural drainage patterns where possible through the use of culverts and subsurface stone drainage ways (stone mattresses). During construction, field drainage conditions will be taken into consideration, and there will be flexibility to install appropriate measures to maintain drainage. Any runoff from the roads will be routed into undisturbed buffers to help maintain water quality and disperse and distribute water volumes to approximate pre-development flows.

Additional erosion control and stormwater BMPs to protect surface water quality during construction of this project have focused on control of erosion during construction through use of sediment barriers and the use of soil stabilization measures including erosion control blankets, spray-on polymer emulsions, and prompt stabilization of exposed surfaces. See the Alteration of Terain Application in Appendix 2B of the SEC Application.

The proposed development will alter approximately 57 acres of land. In order to evaluate the project's effect on peak stormwater runoff rates, a hydrologic model was developed to evaluate the existing and proposed drainage conditions on the site. The results of the analyses indicate that there is no significant change in peak discharge rates between the pre- and post-development conditions for the 2, 10, and 50 year storm events (See the Alteration of Terain Application in Appendix 2B of the SEC application).

(14) The potential of a proposed project to cause or increase flooding, erosion, or sedimentation;

The project has been designed in conformance with standard best management practices for wind park construction and stormwater management. Details of the stormwater management plans for the Project are included in the Alteration of Terrain permit application included as Appendix 2B of the SEC Application.

(15) The extent to which a project that is located in surface waters reflects or redirects current or wave energy which might cause damage or hazards;

This criterion typically applies to projects involving shoreline alterations. Since there are no large open bodies of water or flowing streams being affected by the Project, proposed redevelopment of the site will not redirect current or wave energy. Stream crossings have been designed in accordance with the *New Hampshire Stream Crossing Guidelines* to the extent practicable to minimize the potential for erosion resulting from new crossings.

(16) The cumulative impact that would result if all parties owning or abutting a portion of the affected wetland or wetland complex were also permitted alterations to the wetland proportional to the extent of their property rights. For example, an applicant who owns only a portion of a wetland shall document the applicant's percentage of ownership of that wetland and the percentage of that ownership that would be impacted;

AWE has leased approximately 1,850 acres of private land on seven parcels for the development of the Project. All wetlands that will be impacted by the Project are located entirely within these parcels.

(17) The impact of the proposed project on the values and functions of the total wetland or wetland complex;

The AWE project has been designed to avoid and minimize impacts on wetlands to the extent practicable. This started with desktop review of readily available information including USGS and NWI mapping to identify the field survey area. The initial assessment of the field survey corridor

started with investigation for vernal pools as snow cover left the site and later for wetlands. As it was determined there would be wetland impacts and needs for changes in project alignment and design, additional survey area was added and investigated for natural resources. This is typical of an iterative process that continued throughout the period of resource delineation and civil design (May – October, 2011).

The total permanent impact to wetlands and surface water resources is approximately 0.19 acres. This wetland impact is only 0.3 percent of the land area to be disturbed by this project (57.9 acres).

The primary function of wetlands on the project site is wildlife habitat. The very small area of impact inherently limits the amount of impact to this function. Additionally the narrow, linear nature of these impacts (primarily from gravel roads) further limits impact to this function. The one perennial stream crossing has been designed with a boxculvert which will allow for maintenance of the natural substrates and unrestricted flows along the natural channel.

There are indirect impacts from road construction and a turbine pad to vernal pool terrestrial habitat (VP1, 2, 3, and 7), however these impacts are only to upland area and do not include any impact to the associated wetlands. It is not anticipated that these impacts will adversely affect the productivity of these pools. There is no direct impact to any of the vernal pool breeding habitats (depression). See the attached Vernal Pool Report at Exhibit 6 for additional information.

(18) The impact upon the value of the sites included in the latest published edition of the National Register of Natural Landmarks, or sites eligible for such publication;

An evaluation of the impact of the Project on historic sites is included in Section I and Appendices 9C and 9D of the SEC Application.

(19) The impact upon the value of areas named in acts of congress or presidential proclamations as national rivers, national wilderness areas, national lakeshores, and such areas as may be established under federal, state, or municipal laws for similar and related purposes such as estuarine and marine sanctuaries; and

No such areas have been identified within the Project area.

(20) The degree to which a project redirects water from one watershed to another.

The Project has been designed to minimize the impacts to hydrology on the site and minimize the interruption of the natural flow. Details of the design can be found in the Alteration of Terrain permit application included as Appendix 2B of the SEC Application.